ATK Armament Systems
Energetic Systems
Radford Army Ammunition Plant
Route 114, P.O. Box 1
Radford, VA 24143-0100

www.atk.com

July 20, 2011

Mr. Robert Weld
Department of Environmental Quality
Blue Ridge Regional Office
3019 Peters Creek Road
Roanoke, VA 24019

Subject: Air Compliance Reports

Dear Mr. Weld:

Enclosed please find the DEQ form titled Semi-Annual Monitoring Report, including Plant-Wide Summary of Deviations and DEQ form titled Failure To Monitor, Keep Records Or Report, for the period of January 1 through June 30, 2011.

"Other deviations" are presented in the attached RFAAP Plant-wide Summary of Deviations spreadsheet, as per DEQ approval following discussions between Jody Lambert of DEQ and Paige Holt of RFAAP on May 22, 2004. This spreadsheet includes exceedances of the visible emissions limits specified in permit conditions III.A.5, VII.A.7 and X.A.7 for various processes at RFAAP. It includes supporting information that indicates that the affected facility is maintained and operated during these incidents in a manner consistent with air pollution control practices for minimizing emissions in accordance with permit condition XIII.G. This spreadsheet only contains incidents that lasted for less than 60 consecutive minutes, which have not previously been reported. Those exceedances that occurred for more than 60 consecutive minutes were previously summarized in reports submitted to DEQ. Copies of these reports are included as part of this report.

Should there be any questions regarding this report or any of the attachments herein, please contact Phil Lockard of my staff, 540-639-8344.

Sincerely,

Paige W. Holt, Environmental Manager
Alliant Techsystems Inc.

Enclosures

cc: Clean Air Act Title V Compliance Certification (3AP00)
U.S. Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Coordination: L. DiIoia

for A. Miano

bc: Administrative File
P. Holt
L. DiIoia
Env. File

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

TITLE V SEMI-ANNUAL MONITORING REPORTING FORM

This form may be submitted to report all deviations from the conditions in a Virginia DEQ Title V Permit. All Prompt Deviation Reports and/or any supporting information should be submitted as an attachment and listed below.

Date: **Wednesday, July 20, 2011**

To: **West Central Regional Office, Regional Director**

Source Name: **Radford Army Ammunition Plant** Registration Number: **20656**

Source Address: Route 114, P.O. Box 1 City: Radford State: VA Zip: 2414

This report satisfies our requirement for the **Title V Semi-Annual Monitoring Report (SAMR)**. This report identifies all deviations and periods of non-compliance for the reporting period indicated. All deviations and periods of non-compliance, for the reporting period indicated, have been addressed in this Semi-Annual Monitoring Report.

Please contact **Phillip Lockard, Engineer V** at **540-639-8344**, ext. with questions or concerns regarding this report.

(Each Field Below Must be Completed and the Appropriate Box Must be Checked)

Reporting Period Dates: **1/1/2011** through **6/30/2011** Title V Permit Effective Date: **January 15, 2004**

☐ 1. During the reporting period, ALL monitoring and associated record keeping requirements in the Title V Permit were met and no deviations from these requirements or any other conditions occurred.

☒ 2. During the reporting period, all monitoring and associated recordkeeping requirements in the Title V Permit were met and no deviations from these requirements or any other terms or conditions occurred, EXCEPT for the deviations identified below:

- ☒ A. Deviations were addressed in **CEM Excess Emission Report(s)** Dated: **7/18/2011** ____ ____ ____
- ☐ B. Deviations were addressed in **Fuel Reports** Dated: ____ ____ ____ ____
- ☒ C. Deviations were addressed in **MACT Reports** Dated: **7/18/2011** ____ ____ ____
- ☒ D. Deviations were addressed in **Malfunction Reports** Dated: **2/18/2011** ____ ____ ____
- ☐ E. Deviations were addressed in **Prompt Deviation Reports** Dated: ____ ____ ____ ____
- ☒ F. "**Other Deviations**," which were not previously reported, are described in the **Attachment(s)** to this report.

Comments: ____

Attachments: The form titled Failure to Monitor, keep Records or Report; Plant-wide Summary of Deviations, and a copy of the malfunction report submitted on 2/18/2011.

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name of Responsible Official: **Wm Byron Penland** **Title: Lieutenant Colonel, US Army**

Name of Responsible Official: Kent Holiday Title: **VP & General Manager**

Signature: Wm Byron Penland **Date:** 23 AUG 2011

Signature: Kent Holiday **Date:** Aug 23, 2011

FAILURE TO MONITOR, KEEP RECORDS OR REPORT **Registration No. 20656 Page ___ of ___**

Submitted as Part of Semi-Annual Monitoring Report **Reporting Period: 1/1/11 to 6/30/11**

Permit Condition No. & DESCRIPTION OF REQUIREMENT	DESCRIPTION OF DEVIATION (including date)	REASON FOR DEVIATION & CORRECTIVE ACTION TAKEN

"OTHER" DEVIATIONS

Submitted as Part of Semi-Annual Monitoring Report

Registration No. 20656 **Page** __ **of** __

Reporting Period: 7/1/2010 **to** 12/31/2010

Condition No. & Description of Requirement	**Description of Deviation** (time, emission unit, description of event, cause)	**Description of Associated Monitoring Requirement**	**Description of corrective measures taken (demonstrating a timely & appropriate response)**
III.A.5 Boilers 2, 3, 4, and/or 5 visible emissions < 20% opacity	Excess opacity from Boilers 2, 3, 4, and/or 5 as reported in attached summary of deviations	Other material information provided by COMS voluntarily installed and placed in operation during 2007.	Followed SOP as reported in attached summary of deviations

"OTHER" DEVIATIONS

Submitted as Part of Semi-Annual Monitoring Report

Registration No. 20656 **Page** __ **of** __

Reporting Period: 7/1/2010 **to** 12/31/2010

Condition No. & Description of Requirement	**Description of Deviation** (time, emission unit, description of event, cause)	**Description of Associated Monitoring Requirement**	**Description of corrective measures taken (demonstrating a timely & appropriate response)**
XIII.X Comply with 40 CFR Part 82, Subparts A to F for all Class I or II substances.	Maintenance records by contractors who serviced equipment were found to be incomplete. Leak rate calculations and verification of leak repair verification were not readily available. Additionally, full refrigerant charge in each circuit was not readily available for RFAAP equipment for reference by the servicing contractors. RFAAP records indicate that no Class I substances are present in any on-site refrigeration equipment but that Class II substances are present. Only refrigeration equipment with more than 50# charge of a Class II substance in any circuit is subject to this % leak rate record-keeping and reporting requirement.	RFAAP periodically reviews contract maintenance equipment servicing records for compliance with this permit condition.	During 1H11, RFAAP continued to work with its maintenance contractors for refrigeration and HVAC equipment to ensure that they comply with this permit condition. A site-wide list of all refrigeration equipment at RFAAP with a capacity of more than 50 pounds has been developed. Specialized software for tracking equipment maintenance and refrigerant usage has been installed, and is now in use. Training was provided to RFAAP site refrigeration/HVAC mechanics on this regulatory program and the use of the new software. This software is now being used to track leak rates, repair verifications, refrigerant inventory and various information required by this regulatory program. This software is also being used to track work being performed by outside contractors.

(Report deviations which may have caused excess emissions for more than one hour on a prompt deviation report form, not here)

Plant-wide Summary of Deviations

				Unit								
Date	Start Time	Area	Equipment	#1	#2	#3	#4	#5	Description of Deviation and Root Cause	Duration	Magnitude of Emissions or Opacity, If Known	Immediate Response and Corrective Action
1/2/2011	1:54 AM	PH	Boilers		X	X		X	Soot-blowing	18 min.	26.4	Followed SOP
1/3/2011	6:12 PM	PH	Boilers		X	X		X	Cleaning Boilers 2, 3 and 5	18 min.	71.7	Followed SOP
1/3/2011	11:12 PM	PH	Boilers				X		Startup Boiler 4	12 min.	28.6	Followed SOP
1/4/2011	2:00 AM	PH	Boilers				X		Startup Boiler 4	18 min.	67.2	Followed SOP
1/5/2011	7:00 PM	PH	Boilers					X	Coal feeder failure	30 min.	77.1	Followed SOP
1/11/2011	1:24 AM	PH	Boilers		X	X	X	X	Soot-blowing	12 min.	34.2	Followed SOP
1/11/2011	6:18 AM	PH	Boilers		X	X	X	X	Unkown cause	12 min.	40.9	Followed SOP
1/11/2011	8:30 PM	PH	Boilers		X				Shut down Boiler 2	24 min.	51.1	Followed SOP
1/12/2011	12:24 PM	PH	Boilers			X			Cleaned 3A Pulverizer	12 min.	26.3	Followed SOP
1/15/2011	2:06 AM	PH	Boilers		X			X	Soot-blowing	18 min.	0.1	Followed SOP
1/16/2011	2:12 AM	PH	Boilers		X	X	X	X	Soot-blowing	18 min.	34.3	Followed SOP
1/17/2011	2:18 AM	PH	Boilers		X	X	X	X	Soot-blowing	18 min.	31.8	Followed SOP
1/17/2011	6:12 PM	PH	Boilers		X	X	X	X	Soot-blowing	12 min.	28.1	Followed SOP
1/18/2011	6:18 PM	PH	Boilers		X	X	X	X	Soot-blowing	18 min.	40.4	Followed SOP
1/19/2011	6:00 PM	PH	Boilers		X	X	X	X	Soot-blowing	18 min.	22.7	Followed SOP
1/21/2011	8:18 AM	PH	Boilers					X	Shut down Boiler 5	24 min.	73.4	Followed SOP
1/21/2011	11:06 AM	PH	Boilers		X	X	X	X	Cleaning Boilers 2, 3, 4 and 5	24 min.	52.5	Followed SOP
1/21/2011	1:18 PM	PH	Boilers		X	X	X	X	Testing No.2 T/G with Boilers 2, 3, 4 and 5	12 min.	26.2	Followed SOP
1/27/2011	12:00 AM	PH	Boilers			X			Coal feeder failure	12 min.	74.4	Acitvated chute vibrators and used fuel oil to support combustion
1/29/2011	1:00 AM	PH	Boilers		X				Coal feeder failure	24 min.	45.4	Followed SOP
1/31/2011	5:48 PM	PH	Boilers		X				Coal feeder failure	30 min.	78.7	Followed SOP
2/3/2011	9:42 AM	PH	Boilers			X			Coal feeder failure	12 min.	43.5	Followed SOP
2/4/2011	5:54 AM	PH	Boilers					X	Coal feeder failure	180 min.	37.7	Cleaned and inspected No. 5 pulverizers and used fuel oil to fire boiler. DEQ notified.
2/4/2011	6:06 PM	PH	Boilers		X	X	X	X	Soot-blowing	18 min.	28.2	Followed SOP
2/5/2011	2:18 AM	PH	Boilers		X	X	X	X	Soot-blowing	18 min.	24.1	Followed SOP
2/5/2011	4:00 PM	PH	Boilers		X	X	X	X	Soot-blowing	42 min.	38.4	Followed SOP
2/7/2011	2:06 AM	PH	Boilers		X	X	X	X	Soot-blowing	18 min.	27.4	Followed SOP
2/7/2011	6:18 PM	PH	Boilers		X	X	X	X	Soot-blowing	18 min.	43.9	Followed SOP
2/8/2011	2:18 AM	PH	Boilers		X	X	X	X	Soot-blowing	18 min.	40.4	Followed SOP
2/9/2011	2:30 AM	PH	Boilers		X	X	X	X	Soot-blowing	12 min.	21.5	Followed SOP
2/10/2011	1:24 AM	PH	Boilers					X	Failure of No. 5 ESP B Field	108 min.	36.9	No. 5 ESP wires were cleaned. DEQ Notified
2/10/2011	5:06 AM	PH	Boilers					X	Failure of No. 5 ESP B Field	204 min.	38.9	No. 5 ESP wires were cleaned. DEQ Notified
2/10/2011	12:42 PM	PH	Boilers					X	Failure of No. 5 ESP B Field	24 min.	34.6	No. 5 ESP wires were cleaned. DEQ Notified
2/10/2011	2:18 PM	PH	Boilers					X	Failure of No. 5 ESP B Field	36 min	25.8	No. 5 ESP wires were cleaned. DEQ Notified
2/10/2011	6:00 PM	PH	Boilers					X	Shut down Boiler 5	12 min.	49.0	Followed SOP
2/10/2011	9:12 PM	PH	Boilers		X	X	X		Increase in steam demand	18 min.	31.0	Fuel oil used to maintain pressure
2/11/2011	1:06 PM	PH	Boilers			X			Boiler 3 burner fire	24 min.	39.7	Shutdown pulverizer and cleaned accumulated coal and clinkers per SOP
2/12/2011	8:48 AM	PH	Boilers		X	X	X		Increase in steam demand	24 min.	82.7	Fuel oil used to maintain pressure
2/12/2011	5:54 PM	PH	Boilers		X	X	X		Increase in steam demand	18 min.	42.0	Followed SOP
2/15/2011	10:00 AM	PH	Boilers				X		Shut down Boiler 4	18 min.	37.7	Followed SOP
2/16/2011	6:00 PM	PH	Boilers		X	X		X	Soot-blowing	12 min.	25.0	Followed SOP
2/18/2011	6:00 PM	PH	Boilers		X	X		X	Soot-blowing	18 min.	23.3	Followed SOP
2/20/2011	12:18 AM	PH	Boilers				X		Startup Boiler 4	42 min.	30.7	Followed SOP
2/20/2011	10:00 PM	PH	Boilers					X	Failure of Boiler 5 ID fan bearing	6 min.	61.0	Boiler 5 shut down and secured per SOP
2/22/2011	7:06 AM	PH	Boilers				X		4A pulverizer scraper failed. Used fuel oil to support header pressure.	36 min.	85.3	Replaced scraper
2/24/2011	11:18 AM	PH	Boilers		X	X	X		Celaning burner and adjusting air flow on Boilers 2, 3 and 4	36 min.	51.8	Followed SOP

Plant-wide Summary of Deviations

Date	Start Time	Area	Equipment	Unit #1	#2	#3	#4	#5	Description of Deviation and Root Cause	Duration	Magnitude of Emissions or Opacity, If Known	Immediate Response and Corrective Action
2/26/2011	1:00 AM	PH	Boilers			X			Coal feeder failure	18 min.	65	Followed SOP
2/28/2011	7:48 PM	PH	Boilers			X			Coal feeder failure	18 min.	59.6	Followed SOP
3/5/2011	9:30 AM	PH	Boilers					X	Shut down Boiler 5	12 min.	43	Followed SOP
3/14/2011	4:54 PM	PH	Boilers				X		Startup Boiler 4	18 min.	68.8	Followed SOP
3/14/2011	6:30 PM	PH	Boilers				X		Startup Boiler 4	12 min.	34.3	Followed SOP
3/15/2011	11:18 AM	PH	Boilers			X	X	X	Performing boiler air tests	18 min.	41.5	Adjusted air per SOP
3/16/2011	12:42 AM	PH	Boilers				X		Opacity spike on Boiler 4	18 min.	54.6	Adjusted boiler load per SOP
3/28/2011	11:48 PM	PH	Boilers					X	Cleaning No. 5 Boiler Burner rings top	24 min.	24.4	Removed stoop build up from east top burner plugging burner throat
4/6/2011	2:12 AM	PH	Boilers		X	X	X	X	Boiler 5 upper east burner stopped up. Took 5B Mill off line to be able to remove blockage. Used fuel oil to support pressure.	18 min.	48.1	Followed SOP
4/6/2011	1:54 PM	PH	Boilers						Soot-blowing	18 min.	26	Followed SOP
4/11/2011	5:30 PM	PH	Boilers			X	X	X	Soot-blowing	12 min.	29.9	Followed SOP
4/19/2011	2:00 AM	PH	Boilers			X	X	X	Preparing to clean boilers and blow soot	12 min.	34.5	Inserted oil guns and adjusted air per SOP
4/21/2011	2:24 PM	PH	Boilers			X	X	X	Soot-blowing	12 min.	29.6	Followed SOP
5/6/2011	4:42 AM	PH	Boilers			X	X	X	Increase in steam demand, feeder over feed	12 min.	23.7	Rebalanced air and fuel between boilers per SOP
5/9/2011	8:48 AM	PH	Boilers				X		Start up of B Mill on Boiler 4 due to load increase	12 min.	30.4	Followed SOP
5/15/2011	1:24 AM	PH	Boilers				X		Start up of Boiler 4 fans to cool boiler down for annual maintenance	12 min.	28.6	Energized ESP cabinets per SOP
5/16/2011	6:54 PM	PH	Boilers		X				No. 2A coal feeder failed	12 min.	39.4	Relit boiler with fuel oil guns and restarted 2A Feeder
5/23/2011	5:12 PM	PH	Boilers		X				Loss of ignition	12 min.	31.3	Lit boiler off with fuel oil. Restarted 2A Mill per SOP
5/27/2011	5:54 AM	PH	Boilers		X				No. 2A pulverizer tripped during cleaning	12 min.	33.2	Utilized fuel oil to relight boiler per SOP
5/27/2011	8:24 PM	PH	Boilers						Unknown cause	18 min.	22.4	
6/1/2011	3:18 AM	PH	Boilers						Unknown cause	18 min.	56.8	
6/3/2011	11:30 AM	PH	Boilers					X	Shutdown No. 5 Boiler	12 min.	37.2	Followed SOP
6/12/2011	1:48 AM	PH	Boilers		X				No. 2 FD fan failed during startup when the VFD tripped	12 min.	37.3	Re-started per SOP
6/14/2011	2:00 AM	PH	Boilers		X	X			Soot-blowing	12 min.	27.1	Followed SOP
6/21/2011	1:42 PM	PH	Boilers				X		Startup Boiler No. 4	36 min.	27.9	Followed SOP
6/23/2011	3:24 PM	PH	Boilers			X		X	Switched from No. 2 TG to No. 1 TG	24 min.	62.2	Adjusted boiler loads per SOP

ATK Armament Systems
Energetic Systems
Radford Army Ammunition Plant
Route 114, P.O. Box 1
Radford, VA 24143-0100

www.atk.com

February 18, 2011

Ms. Mary Monroe
Department of Environmental Quality
West Central Regional Office
3019 Peters Creek Road
Roanoke, Virginia 24019

Subject: Excess Opacity from the Powerhouse at Radford Army Ammunition Plant

Dear Ms. Monroe:

This is in follow-up to the visible emissions excursion that occurred at the Radford Army Ammunition Plant (RFAAP) powerhouse on February 4, 2011. Below is a description of this incident.

During the morning of February 4, 2011, visible emissions from the powerhouse began to gradually increase. At approximately 6:00 AM, visible emissions rose above 20% opacity. Efforts to determine the cause of the problem and take corrective action were initiated. It was determined that the elevated visible emissions were related to the coal feed system in the Number 5 boiler. Fuel oil feed was initiated to allow operators to clean and examine the coal grind and feed equipment. The pulverizers were cleaned, inspected and returned to service, but opacity remained elevated. A fuel oil gun that was being used to supplement combustion while inspecting and cleaning the No. 5 pulverizers was determined to be faulty. This fuel oil gun was replaced and visible emissions from the powerhouse began to decrease. At approximately 9:42 AM on February 4, visible emission fell consistently below 20% opacity.

Visible emissions were above and below 20% opacity during the course of this incident. They were above 20% continuously from approximately 7:30 AM until approximately 8:30 AM. During this period, the maximum recorded opacity was 37.7% and the average recorded opacity was 29.5%.

Additional opacity excursions have occurred on February 10 and 17. In those cases, similar actions were taken to identify potential issues with the coal handling system, and fuel oil was burned to help sustain combustion. On February 10, operators worked throughout the day to identify the issue; when no immediate cause was identified, the boiler was shut down for inspection. It was found that the wires in the B field of the electrostatic precipitator were coated with material which was not allowing them to operate properly. The wires were cleaned and the boiler was returned to operation. However, opacity again exceeded 20% for more than an hour during two instances on February 17. Following the early morning excursion, additional inspections identified that the top soot valves for Boiler #5 were not operating properly. The solenoid valve was replaced, top soot removed. It is not known whether these valves also contributed to the earlier opacity excursions.

11-815-31
PE Lockard

Last night at approximately 7 PM, another excursion occurred. Foreman and powerhouse operators identified that the flame from lower East burner was not burning properly on Boiler #3. Coal feed to the lower burners was stopped and oil was used to support the steam demand. The burner was found to be clogged with coal and was cleaned and returned to service. We are continuing to investigate the reason for this issue and will send an updated letter once more information is available.

Please feel free to call Phil Lockard (540-639-8344) if you have any questions or need additional information.

Sincerely,

Paige Holt, Environmental Manager
Alliant Techsystems Inc.

11-815-31
PE Lockard

Coordination: L. DiIoia

bc: Administrative File
P. Holt
G. Twait
G. Hagee
D. Clark
L. DiIoia
Env File

11-815-31
PE Lockard

ATK Armament Systems
Energetic Systems
Radford Army Ammunition Plant
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Radford, VA 24143-0100

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April 18, 2012

Mr. Robert Weld
Department of Environmental Quality
Blue Ridge Regional Office
3019 Peters Creek Road
Roanoke, VA 24019

Subject: Revised 2011 Semi-Annual Title V Annual Compliance Certificate and Semi-Annual Monitoring Report

Dear Mr. Weld:

Enclosed please find the:

- DEQ form titled Semi-Annual Monitoring Report, including Plant-Wide Summary of Deviations and DEQ form titled Failure To Monitor, Keep Records Or Report, for the period of July 1 through December 31, 2011, and
- DEQ form Title V Annual Compliance Certification Reporting Form for the period of January 1 through December 31, 2011

The Semi-Annual Monitoring Report for the second half of 2011 required revision to exclude emergency safety vent openings attributed to malfunctions that were previously reported. The emergency safety vent openings on the hazardous waste incinerators that are subject to 40 CFR 63 §63.1211 were reported when they were the result of malfunctions and deviations. Upon review of the operating data and operator logs, it was determined that two of the nine events met the definition of emergency safety openings and were not the result of malfunctions. The Semi-Annual Monitoring Report is revised to remove the emergency safety vent openings that were the direct result of malfunctions. A list of the emergency safety vent openings attributed to malfunctions is attached for completeness.

The decision to report emergency safety vent openings that occurred during 2011 was made in early 2012. In 2011, a formal emergency safety vent plan was not in place because our original assessment was that the baghouse bypasses were not emergency safety vent openings. This determination has since been reevaluated and reversed. Thus, the two events which occurred were not reported within 5 days to DEQ as required and are reported as additional deviations. An emergency safety vent plan, separate from the SSM plan, was put into effect at the end of February 2012 and meets the requirements set forth in 40 CFR § 63.1206(c)(4)(ii).

Additionally, RFAAP previously reported a failure to maintain a feedstream analysis plan (FAP) for the hazardous waste incinerators due to RFAAP internal laboratory operating procedure inconsistencies. The inconsistencies are not present in the FAP but with documentation referenced by the FAP. Thus the incinerator FAP is compliant with the HWC MACT requirements specified in 40 CFR §63.1209(c)(2) because the plan specifies:

(i) The parameters for which we analyze each feedstream to ensure compliance with the operating parameter limits;
(ii) Whether we obtain the analysis by performing sampling and analysis or by other methods;
(iii) How we use the analysis to document compliance with applicable feedrate limits;
(iv) The test methods we use to obtain the analyses;
(v) The sampling methods we use to obtain a representative sample of each feedstream to be analyzed; and
(vi) The frequency with which we review or repeat the initial analysis of the feedstream to ensure that the analysis is accurate and up to date.

The 2H2011 Semi-Annual Monitoring Report includes the attached RFAAP Plant-wide Summary of Deviations spreadsheet, as per DEQ approval following discussions between Jody Lambert of DEQ and Paige Holt of RFAAP on May 22, 2004. This spreadsheet includes (a) exceedances of the visible emissions limits specified in permit conditions III.A.5 for the coal-fired boilers at RFAAP and (b) includes supporting information that indicates that the affected facility is maintained and operated during these incidents in a manner consistent with air pollution control practices for minimizing emissions in accordance with permit condition XIII.G. This spreadsheet only contains incidents that lasted for less than 60 consecutive minutes which have not previously been reported. The exceedance that occurred for more than 60 consecutive minutes on December 21, 2011 was previously summarized in the report dated December 29, 2011 that was submitted to DEQ. A copy of that report is included as part of this report.

On January 9, 2012, Judge Paul L. Friedman of the United States District Court for District of Columbia ("D.C. District Court") issued a decision in which he invalidated and "vacated" EPA's delay of the effective date of the National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Industrial, Commercial and Institutional Boilers and Process Heaters; 76 Fed. Reg. 15,608 (Mar. 21, 2011) ("Boiler MACT"). EPA had formally delayed the effective date of the Boiler MACT in the Industrial, Commercial, and Institutional Boilers and Process Heaters and Commercial and Industrial Solid Waste Incineration Units: Final rules; Delay of effective dates, 76 Fed. Reg. 28,662 (May 18, 2011) (the "Delay Notice"). Under the Boiler MACT, initial notifications for existing affected sources were due on or before September 21, 2011, or 120 days after the effective date. However, as of September 21, 2011, and throughout the reporting period the Delay Notice was still in effect. As a result of the D.C. District Court's vacatur of the Delay Notice, RFAAP will be preparing the submission of an initial notification for our existing boilers in accordance with the guidance in the EPA "No Action Assurance" letter dated February 7, 2012. We do not believe that our failure to previously submit an initial notification on or before September 21, 2011 constitutes a deviation from any permit requirements because we reasonably relied on the Delay Notice and we will be submitting the appropriate documents in accordance with the guidance in the EPA "No Action Assurance" letter dated February 7, 2012. Nothing in this report concedes a violation or waives any defenses that might be available. Moreover, RFAAP wishes to clarify that it appropriately did not submit the initial notification based on information and belief formed after reasonable inquiry in light of the Delay Notice and EPA's own example notification form on its website that contained the following statement:

> *Because of the current stay of the effective date of the Boiler MACT, the initial notification and any other forms pertaining to this rule will not be due until further notice.*

RFAAP is not reporting a deviation of Title V permit condition X.A.1 during this reporting period because the reporting requirement to submit the boiler MACT initial notification on or before September 21, 2011 was not an applicable requirement of the MACT regulation for fossil fuel fired boilers, based on the above understanding of the impact of the January 9, 2012 decision.

Should there be any questions regarding this report or any of the attachments herein, please contact me at 540-639-8658.

Sincerely,

Paige W. Holt

Paige W. Holt, Environmental Manager
Alliant Techsystems Inc.

Enclosures:

DEQ Form - Title V Semi-Annual Monitoring Reporting
DEQ Form - FAILURE TO MONITOR, KEEP RECORDS OR REPORT
DEQ Form – "Other" Deviations
DEQ Form - Title V Annual Compliance Certification Reporting
RFAAP Plant-wide Summary of Deviations spreadsheet
RFAAP ESV Openings Attributed to Malfunctions spreadsheet

Copies of Previously Submitted Reports-

12-815-54
LHabersack

3Q11 NOx CEM Excess Emission Report- RFAAP Nitrocellulose Process
3Q11 CO CEM Excess Emission Report- RFAAP Explosive Waste Incinerators
12-29-2011 Prompt Deviation Report
4Q11 NOx CEM Excess Emission Report- RFAAP Nitrocellulose Process
4Q11 CO CEM Excess Emission Report- RFAAP Explosive Waste Incinerators
2H11 MACT Subpart EEE Report- RFAAP Explosive Waste Incinerators
11-29-2011 New Carbon Adsorption System (Building 2600) Emissions for November 22, 2011
1-11-2011 RFAAP Composite Sample at the Incinerator
8-4-2011 Malfunction of Acid Tank Farm Scrubber at RFAAP

cc: Clean Air Act Title V Compliance Certification (3AP00)
U.S. Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

12-815-54
LHabersack

FAILURE TO MONITOR, KEEP RECORDS OR REPORT **Registration No. 20656 Page 1 of 3**

Submitted as Part of Semi-Annual Monitoring Report **Reporting Period: 7/1/11 to 12/31/11**

Permit Condition No. & DESCRIPTION OF REQUIREMENT	DESCRIPTION OF DEVIATION (including date)	REASON FOR DEVIATION & CORRECTIVE ACTION TAKEN
VII.B.4 The piccolo scrubber shall be equipped with a device to continuously measure the scrubber liquid flow rate. The monitoring device shall be installed, maintained, calibrated and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations. The monitoring device shall be provided with adequate access for inspection and shall be in operation when the scrubber is operating.	Algae buildup on the rotameters used to measure the piccolo scrubber liquid flow rate prevented personnel from easily determining the rate on the dates during this reporting period that the piccolo scrubber was in service: 7/1/11 through 7/5/11, 7/9/11, 7/10/11, 7/19/11, 9/2/11 10/7/11, 10/22/11, 10/23/11, 10/31/11, 11/7/11, 12/5/11, 12/27/11 through 12/31/11 The observed condition of the rotameter indicates that it was not maintained with approved procedures as required by this condition even though the rotameter was in operation when the scrubber was in service.	After this deviation was identified in January 2012 during preparation of this semi-annual report, initial steps were initiated to clean the rotameter so that it would be able to indicate flow when the piccolo scrubber was in service during 2012.

FAILURE TO MONITOR, KEEP RECORDS OR REPORT **Registration No. 20656 Page 2 of 3**

Submitted as Part of Semi-Annual Monitoring Report **Reporting Period: 7/1/11 to 12/31/11**

Permit Condition No. & DESCRIPTION OF REQUIREMENT	DESCRIPTION OF DEVIATION (including date)	REASON FOR DEVIATION & CORRECTIVE ACTION TAKEN
VII.A.4 The temperature of the fired heater acid gas outlet preceding the SCR catalyst column shall be maintained between 500°F and 650°F during operation.	Temperatures are recorded hourly on daily inspection sheets and continuously monitored and recorded in site data historian (refer to ATK proprietary Active Factory tag ID 3055-TI-647.) The SCR fired heater acid gas outlet temperature was less than 500°F while the SCR was in operation briefly on 7/9/11 from 15:10-15:24 before the SCR was shut down at 18:22 and again on 7/10/11 from 12:50-16:06 while the SCR was in operation before the SCR was shut down at 16:06.	RFAAP determines intermittent compliance with this permit condition because operating logs indicate that the SCR was in operation when the recorded temperature was below 500°F during these instances. The SCR was taken out of service on the same dates that these low temperature events occurred and the temperature remained above 500°F during operation for the rest of the reporting period. The low temperature interlock placed on the SCR fired heater acid gas outlet was previously set at 475°F. This been corrected and the low temperature set-point has been increased to 500°F.

Submitted as Part of Semi-Annual Monitoring Report Reporting Period: 7/1/11 to 12/31/11

Permit Condition No. & DESCRIPTION OF REQUIREMENT	DESCRIPTION OF DEVIATION (including date)	REASON FOR DEVIATION & CORRECTIVE ACTION TAKEN
IX.B.1 The permittee shall comply with the operating requirements and operating parameter limits specified in the September 29, 2003 or most current Documentation of Compliance prepared pursuant to 40 CFR 63, Subpart EEE, Section 63.1211; with the operating requirements and operating parameter limits specified in the Notification of Compliance prepared pursuant to 40 CFR 63, Subpart EEE, Section 63.1210; and with monitoring requirements in accordance with 40 CFR 63, Subpart EEE, Section 63.1209. IX.C The permittee shall maintain records in accordance with 40 CFR 63, Subpart EEE, Section 63.1211. IX.E The permittee shall comply with reporting requirements in accordance with 40 CFR 63, Subpart EEE, Section 63.1211.	It was determined that the container collecting the grab sample of propellant samples from July 2011 was not removed which resulted in additional material from August being added to the same container. RFAAP did not have and maintain an ESV operating plan during this reporting period as required by 40 CFR 63, Subpart EEE, Section 63.1206(c)(4)(ii) because our initial evaluation had shown that the baghouse bypasses were not ESVs. The immediate reports required by 40 CFR 63, Subpart EEE, Section 63.1206(c)(4)(iv) were not submitted within 5 days of occurrence after the following each emergency safety vent (ESV) opening that occurred during this reporting period (and during previous reporting periods.) RFAAP is reporting this as a deviation to these permit conditions because these permit conditions reference section 63.1211 which, in turn, references sections 63.1206 and 63.1209 of Subpart EEE. As summarized in previously submitted MACT Subpart EEE semi-annual reports for 2011, the ESV opened during 2011on these dates for the following durations: **Incinerator / Date / Start Time / Duration** 441 / 8/21/2011 / 18:56 / 28 min. 440 / 9/25/2011 / 16:12 / 14 min. RFAAP failed to maintain records in accordance with 40 CFR 63, Subpart EEE, Section 63.1211 since the AWFCO/Bypass/SSM report failed to be generated for two baghouse bypass events in 2011, specifically on 9/25/11 and on 8/4/11. RFAAP determines intermittent compliance with IX.B.1 as uncorrected CO values >3000 ppmv may not be recorded as 10,000 ppmv as required by 63.1209(a)(3)(i) for determining hourly rolling average CO.	These deviations were self-identified and reported to VDEQ in 2010 following an environmental audit of Subpart EEE requirements. When this MACT requirement first took effect, both RFAAP and VDEQ did not consider the baghouse bypass vent to be an ESV subject to the Section 63.1206(c)(4) requirements; however, RFAAP determined that the requirements in 63.1206(c)(4)(iv) to report ESV openings and in 63.1206(c)(4)(ii)to maintain a ESV operating plan did apply. RFAAP re-identified this gap in its records and reporting systems during preparation of this 2H11 semi-annual report. RFAAP has an ESV operating plan that includes procedures for reporting each instance which was completed in February 2012. RFAAP will complete training on these ESV requirements and a review of recordkeeping for all affected personnel by 6/30/2012. CO values greater than 3000 ppmv are consistently recorded as 10000 ppmv in determining the hourly rolling average effective April 2012.

"OTHER" DEVIATIONS

Submitted as Part of Semi-Annual Monitoring Report

Registration No._____20656_ **Page_1_of_1__**

Reporting Period:__7/1/2011_____to___12/30/2011_____

Condition No. & Description of Requirement	**Description of Deviation** (time, emission unit, description of event, cause)	**Description of Associated Monitoring Requirement**	**Description of corrective measures taken (demonstrating a timely & appropriate response)**
III.A.5 Boilers 2, 3, 4, and/or 5 visible emissions < 20% opacity	Excess opacity from Boilers 2, 3, 4, and/or 5 as reported in attached summary of deviations	Other material information provided by COMS voluntarily installed and placed in operation during 2007.	Followed SOP as reported in attached summary of deviations
X.A.7 Visible emissions . . . shall not exceed 20 % except during one six-minute period in any one hour in which visible emissions shall not exceed 60 %.	Excess opacity from acid rail car unloading and from the acid tank farm scrubber as reported in the attached summary of deviations	Routine visible emissions observations of emission sources	Followed SOP as reported in attached summary of deviations

(Report deviations which may have caused excess emissions for more than one hour on a prompt deviation report form, not here)

Emergency Safety Vent Events Associated with Malfunctions Submitted as Part of Semi-Annual Monitoring Report

Registration No. 20656

Reporting Period: 7/1/2011 to 12/31/2011

Unit	Date	Time Start Bypass	Duration	Explanation of Event
441	1/13/2011	5:55	21 min.	Malfunction #30 and #2. Malfunction due to loss of water flow to the evaporative cooler, which was exacerbated by poor air pressure to the nozzles. Following slurry shut off, the baghouse temperature spiked high resulting in a bypass. The motor on the #1 air compressor was replaced.
440	1/21/2011	2:48	5 min.	Malfunction #27. Malfunction due to plugged evaporative cooler nozzles, which resulted in poor control and rapid swings in the evaporative cooler water flow. The baghouse bypassed on a low evaporative cooler temperature.
440	1/22/2011	2:29	14 min.	Malfunction #30. Brine pump failure resulted in loss of evaporative cooler water flow. The baghouse initially bypassed on high temperature. The baghouse was brought back online for a short period but then bypassed on low temperature as the evaporative cooler temperature continued to swing. Waste feed was not resumed in between the bypass events.
		2:44	8 min.	
440	1/22/2011	6:39	1 min.	Malfunction #30. Malfunction due to a feed pump blockage causing a sudden rise in the evaporative cooler temperature and a baghouse bypass. The baghouse was brought back online on several instances, but continued to re-enter a bypass as the temperature continued to swing from high to low. Waste feed was not resumed in between the bypass events.
		6:48	13 min.	
		7:41	7 min.	
		7:49	17 min.	
		8:25	14 min.	
441	3/13/2011	14:21	17 min.	Malfunction #6. A communication failure let to an automatic cutoff of the waste feed and a loss of gas flow to the kiln and afterburners. The evaporative cooler temperature goes very low upon burner loss (causing bypass), and then swings back high as it attempts to compensate for the low temperature.
441	3/15/2011	5:43	1 min.	Malfunction #27. Malfunction due to plugged evaporative cooler nozzles. This led to a sudden increase in the evaporative cooler water flow when the plug cleared. The sudden increase in water caused a low temperature bypass.
441	4/4/2011	5:16	68 min.	Malfunction #6. Malfunction due to communication failure that resulted in a baghouse bypass.
441	7/9/2011	14:55	61 min.	Malfunction #1. Power failure resulted in an emergency shutdown of the incinerator and bypass of the baghouse. The unit was restarted once power was restored.
441	8/4/2011	7:35	133 min.	Malfunction #1. Power failure resulted in an emergency shutdown of the incinerator and bypass of the baghouse. The unit was restarted once power was restored, but power was lost again. Each time that power was lost, the baghouse went offline.
		10:44	8 min.	
440	9/22/2011	3:38	6 min.	Malfunction #30. Malfunction of water supply to the evaporative cooler requiring the operator to manually adjusting the control valve setting. During this process, the temperature on the evaporative cooler spiked high and the baghouse bypassed. The system was stabilized and the baghouse was brought back online.
440	10/24/2011	20:08	17 min.	Malfunction #27. Evaporative cooler nozzles plugged. The loss of sufficient water flow caused the temperature to go high and cut off the waste feed. The subsequent temperature fluctuation resulted in a bypass of the baghouse. Once the system was stable, the nozzles were flushed and the baghouse was brought back online.

Emergency Safety Vent Events Associated with Malfunctions Submitted as Part of Semi-Annual Monitoring Report

Registration No. 20656 **Page 2 of 2**

Reporting Period: 7/1/2011 to 12/31/2011

Unit	Date	Time Start Bypass	Duration	Explanation of Event
440	10/25/2011	3:41	4 min.	Malfunction #27. Evaporative cooler nozzles plugged. The loss of sufficient water flow caused the temperature to go high and cut off the waste feed. The subsequent temperature fluctuation resulted in a bypass of the baghouse. After the initial feed cutoff, the temperature enters a swing period (high, low, etc.) where the baghouse comes online and goes back offline repeatedly through the period. The waste feed was not resumed in between these bypass events.
		3:53	2 min.	
		4:05	1 min.	
		4:10	16 min.	
441	11/1/2011	22:15	2 min.	Malfunction #6. Malfunction due to communication failure that resulted in a baghouse bypass.
440	12/27/2011	9:41		Calibrations/AWFCO Checks, No waste in the kiln.
		10:12		
		10:27		

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

TITLE V ANNUAL COMPLIANCE CERTIFICATION REPORTING FORM

This form may be submitted to report the compliance status for the permit conditions in a Virginia DEQ Title V Permit. Each field below must be completed and the appropriate box must be checked.
Note: If compliance was not continuous, this certification is not complete unless DEQ and EPA have a copy of the Semi-annual Monitoring Report(s) covering the period where compliance was not continuous (either previously received (DEQ) or attached to this report (EPA)).

Date: Friday, April 20, 2012

To: DEQ's Blue Ridge Regional Office, Regional Director

CC: Clean Air Act Title V Compliance Certification (3AP00)
U. S. Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Source Name: RFAAP Registration Number: 20656 and 21258

Source Address: SR 114 City: Radford State: VA Zip: 24143

This report satisfies our requirement for the **Title V Annual Compliance Certification Report (ACC)** and identifies all deviations and periods of non-compliance for the reporting period indicated.

For questions or concerns regarding this report, please contact the following individual:

Contact Name: Laura Habersack Contact Title: Engineer Phone Number: 540-639-8344 Ext._____

Reporting Period Dates: 1/1/11 through 12/31/11

Title V Permit Effective Date: 1/15/04
Each condition is hereby identified and included by reference into this certification.

☐ **1.** This source was in continuous compliance with all permit conditions contained in the Title V permit during the entire reporting period. The method(s) used to determine compliance is/are the method(s) specified in the Title V permit.

☒ **2.** This source was in continuous compliance with all permit conditions contained in the Title V permit during the entire reporting period EXCEPT for the deviations identified in Title V Semi-annual Monitoring Report(s) dated 4/20/2012 and 7/20/2011. The reports are incorporated by reference into this certification and have either been previously submitted or are attached. Unless otherwise indicated and described in the Title V Semi-annual Monitoring Report(s), the method(s) used to determine compliance is/are the method(s) specified in the Title V permit.

Comments: (if additional space is needed, please attach supporting documentation and indicate below) _____

Attachments (list here): 1H2011 and 2H2011 Title V Semi-Annual Monitoring Reports and Attachments

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name of Responsible Official: Michael A. Miano Title: VP, OPS, Quality, Safety, Environment, Security

Name of Responsible Official: Wm Bryon Penland Title: Lt. Col., Commander

Signature Karen Davies for Michael Miano Date: 4/25/12

Signature Wm Bryon Penland Date: 25 APR 2012

DEQ
VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

TITLE V SEMI-ANNUAL MONITORING REPORTING FORM

This form may be submitted to report all deviations from the conditions in a Virginia DEQ Title V Permit. All Prompt Deviation Reports and/or any supporting information should be submitted as an attachment and listed below.

Date: **Friday, April 20, 2012**

To: **West Central Regional Office, Regional Director**

Source Name: **Radford Army Ammuniton Plant** Registration Number: **20656**

Source Address: Route 114, P.O. Box 1 City: Radford State: VA Zip: 24143

This report satisfies our requirement for the **Title V Semi-Annual Monitoring Report (SAMR)**. This report identifies all deviations and periods of non-compliance for the reporting period indicated. All deviations and periods of non-compliance, for the reporting period indicated, have been addressed in this Semi-Annual Monitoring Report.

Please contact **Laura Habersack, Engineer** at **540-639-8344**, ext. with questions or concerns regarding this report.

(Each Field Below Must be Completed and the Appropriate Box Must be Checked)

Reporting Period Dates: **7/1/2011** through **12/31/2011** Title V Permit Effective Date: **January 15, 2004**

☐ 1. During the reporting period, ALL monitoring and associated record keeping requirements in the Title V Permit were met and no deviations from these requirements or any other conditions occurred.

☒ 2. During the reporting period, all monitoring and associated recordkeeping requirements in the Title V Permit were met and no deviations from these requirements or any other terms or conditions occurred, EXCEPT for the deviations identified below:

- ☒ A. Deviations were addressed in **CEM Excess Emission Report(s)** Dated: **10/4/2011 1/12/2012 10/4/2011 1/13/2012**
- ☐ B. Deviations were addressed in **Fuel Reports** Dated: ____ ____ ____ ____
- ☒ C. Deviations were addressed in **MACT Reports** Dated: **1/17/2012** ____ ____ ____
- ☒ D. Deviations were addressed in **Malfunction Reports** Dated: **8/4/2011** ____ ____ ____
- ☒ E. Deviations were addressed in **Prompt Deviation Reports** Dated: **12/29/2011** ____ ____ ____
- ☒ F. "**Other Deviations**," which were not previously reported, are described in the **Attachment(s)** to this report.

Comments: ____

Attachments: DEQ forms Failure to Monitor, Keep Records or Report and "Other Deviations"; Plant-wide Summary of Deviations; 3Q and 4Q CEM Excess Emission Reports- NC SCR NOx and 440/441 EWI CO; 2H11 MACT EEE

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name of Responsible Official: Michael A. Miano Title: VP, OPS, Quality, Safety, Environment, Security

Name of Responsible Official: Wm Bryon Penland Title: Lt. Col., Commander

Signature Karen Davies for Michael Miano Date: 4/25/12

Signature [signature] Date: 25 APR 2012

Plant-wide Summary of Deviations												
				Unit								
Date	Start Time	Area	Equipment	#1	#2	#3	#4	#5	Description of Deviation and Root Cause	Duration	Magnitude of Emissions or Opacity, If Known	Immediate Response and Corrective Action
7/1/2011	12:24 PM	PH	Boilers					x	Shutdown boiler	12 min.	33.3	Followed SOP
7/2/2011	12:12 AM	PH	Boilers			x		x	Testing ESP rappers while boilers shutdown	42 min.	70.3	Followed SOP to restart fans and energize ESP
7/4/2011	2:12 PM	PH	Boilers		x				Startup boiler	12 min.	67.4	Followed SOP
7/5/2011	8:42 AM	PH	Boilers				x		Power transients to boiler	12 min.	41.6	Followed SOP to restart boiler
7/9/2011	2:42 PM	PH	Boilers		x		x		Power transients to boilers when buzzard shorted out substation	12 min.	21.2	Followed SOP
7/15/2011	2:00 PM	PH	Boilers		x				Shutdown boiler	30 min.	50.2	Followed SOP
7/17/2011	9:30 PM	PH	Boilers					x	5B coal feeder pipe plugged	12 min.	58.4	Followed SOP to stabilize combustion with fuel oil while removing coal feeder pluggage
7/19/2011	12:54 PM	PH	Boilers				x	x	Power loss to both boilers during lightning storm	12 min.	36.5	Followed SOP to re-start boilers
7/22/2011	3:42 PM	PH	Boilers				x	x	Power loss to both boilers	36 min.	90.5	Followed SOP to re-start boilers
8/2/2011	12:30 AM	PH	Boilers		x		x		Soot-blowing	12 min.	21	Followed SOP
8/4/2011	2:18 AM	PH	Boilers		x				Soot-blowing	12 min.	24.2	Followed SOP
8/25/2011	2:06 AM	PH	Boilers		x				Soot-blowing	12 min.	25	Followed SOP
9/9/2011	12:18 PM	PH	Boilers			x	x		Soot-blowing	12 min.	25.9	Followed SOP
9/10/2011	11:54 AM	PH	Boilers			x	x		Soot-blowing	12 min.	24.6	Followed SOP
9/12/2011	2:24 PM	PH	Boilers			x	x		Cleaning and soot-blowing	12 min.	26.8	Followed SOP
9/13/2011	11:30 AM	PH	Boilers		x				Startup boiler	12 min.	20.7	Followed SOP
9/13/2011	5:18 PM	PH	Boilers		x				2A coal feeder shutdown	12 min.	32.4	Followed SOP to restart boiler 2 while stabilizing combustion in boiler 4 with fuel oil
9/14/2011	9:36 PM	PH	Boilers		x		x		Soot-blowing	12 min.	28.3	Followed SOP
9/15/2011	5:00 PM	PH	Boilers						Turbine generator 1 shutdown caused sudden steam load change	18 min.	31.2	Followed SOP to adjust air and fuel to match lower steam demand
9/16/2011	1:12 AM	PH	Boilers				x		Startup boiler	24 min	63.6	Followed SOP
9/17/2011	12:00 PM	PH	Boilers		x				Shutdown boiler pulverizers	12 min.	54.8	Followed SOP to feed fuel oil to support stable combustion during shutdown
9/17/2011	1:30 PM	PH	Boilers		x				Shutdown boiler	18 min.	37	Followed SOP
9/17/2011	4:12 PM	PH	Boilers				x		Startup boiler	30 min	28.6	Followed SOP

Plant-wide Summary of Deviations

Date	Start Time	Area	Equipment	Unit #1	#2	#3	#4	#5	Description of Deviation and Root Cause	Duration	Magnitude of Emissions or Opacity, If Known	Immediate Response and Corrective Action
9/18/2011	5:00 AM	PH	Boilers				x		Cleaning burner	18 min.	31.3	Followed SOP to feed fuel oil to support stable combustion
9/19/2011	12:36 AM	PH	Boilers			x			Shutdown 3A mill for cleaning	12 min.	25.8	Followed SOP to restart mill
10/7/2011	9:36 AM	PH	Boilers		x				Power outage	30 min	57.8	Followed SOP
10/8/2011	4:42 PM	PH	Boilers		x				Turbine tripped off-line, caused boiler relief valve to open, but did not reseat when closed.	30 min	40.4	Shutdown boiler 2 and increased load to boilers 4 and 5 per SOP
10/18/2011	4:54 PM	PH	Boilers					x	Wet coal plugged feeder pipes	12 min.	49	Followed SOP-cleared blockage and started up boiler
10/18/2011	11:06 PM	PH	Boilers				x		Startup boiler	12 min.	35.6	Followed SOP
11/18/2011	6:00 AM	PH	Boilers		x				Cleaning boiler	12 min.	27.8	Followed SOP- adjusted boiler draft
12/27/2011	6:18 AM	PH	Boilers		x	x	x	x	Soot-blowing	12 min.	27.2	Followed SOP
12/29/2011	2:24 PM	PH	Boilers		x	x	x	x	Soot-blowing	12 min.	36.1	Followed SOP
12/30/2011	3:54 PM	PH	Boilers		x				Soot-blowing	12 min.	39.1	Followed SOP
8/3/2011	3:30PM	Acid	Unloading station						Sulfuric acid rail car unloading	6 min.	UNK	Reduced air purge
8/4/2011	6:45PM	Acid	Tank Farm						Visible NOx Emissions due to chiller loss	60 min.	UNK	Followed SOP, restarted chiller
8/4/2011	7:35 AM	WPI	441						Failure to generate internal form documenting AWFCO/ Baghouse bypass however event was captured by routine review of operating data by environmental department staff.	135 min.		Retrain operators, review and update the SSM recordkeeping
8/21/2011	6:56 PM	WPI	441						ESV Opening, Incorrect brine pump shut off	28 min.		Followed SOP
8/21/2011	6:56 PM	WPI	441						Failure to Report ESV to DEQ	28 min.		Finalized ESV plan, Commence plan late Feb. 2012
9/25/2011	4:21 PM	WPI	440						ESV Opening, Failure to control rapid combustion upon feed shut off	14 min.		Followed SOP
9/25/2011	4:21 PM	WPI	440						Failure to Report ESV to DEQ	14 min.		Finalized ESV plan, Commence plan late Feb. 2012
9/25/2011	4:21 PM	WPI	440						Failure to generate internal form documenting AWFCO/ Baghouse bypass however event was captured by routine review of operating data by environmental department staff.	14 min.		Retrain operators, review and update the SSM recordkeeping

ATK Armament Systems
Energetic Systems
Radford Army Ammunition Plant
Route 114, P.O. Box 1
Radford, VA 24143-0100

www.atk.com

October 4, 2011

Mr. Frank Adams
Virginia Department of Environmental Quality
Blue Ridge Regional Office
3019 Peters Creek Road
Roanoke, VA 24019

Subject: CMS Quarterly Report, Third Quarter 2011
NO_x Abatement System, Radford Army Ammunition Plant

Dear Mr. Adams:

Attached, please find the Continuous Monitoring System (CMS) performance summary and emissions data summary for the NO_x abatement system at the Radford Army Ammunition Plant (RFAAP). This data summary reports the CMS performance for the third calendar quarter for 2011. During this quarter the CMS percent unavailability was 5.77% and the percent excess emissions during monitored operating time was 0.0%. For purposes of reporting source down time, the SCR itself is considered to be the "source."

A cylinder gas audit (CGA), using Protocol 1 sample gas was conducted on September 13, 2011 in accordance with 40 CFR 60, Appendix F. The CGA indicated that the monitor error was less than 15%, which is within acceptable limits defined in 40 CFR 60, Appendix F, Section 5.2.3 (2). The records of the CGA are maintained on site as required by Title V permit condition VII.C.3.

A calibration drift was conducted each calendar day during this reporting period that the source was in operation. Section 4.1 of Procedure 1in Appendix F to 40 CFR Part 60—Quality Assurance Procedures states that "*As described in 40 CFR 60.13(d), source owners and operators of CEMS must check, record, and quantify the CD at two concentration values at least once daily (approximately 24 hours) in accordance with the method prescribed by the manufacturer. The CEMS calibration must, as minimum, be adjusted whenever the daily zero (or low-level) CD or the daily high-level CD exceeds two times the limits of the applicable PS's in appendix B of this regulation.*" Section 4.3 of Procedure 1in Appendix F to 40 CFR Part 60—Quality Assurance Procedures states that "*If either the zero (or low-level) or high-level CD result exceeds twice the applicable drift specification in appendix B for five, consecutive, daily periods, the CEMS is out-of-control. If either the zero (or low-level) or high-level CD result exceeds four times the applicable drift specification in appendix B during any CD check, the CEMS is out-of-control. If the CEMS is out-of-control, take necessary corrective action. Following corrective action, repeat the CD checks.*" The high-level calibration drift on a few dates exceeded twice the applicable drift specification during this reporting period. Because this did not occur for 5 consecutive days, the NOx monitor is not considered to be "out-of-control" or the monitor data invalid on these dates.

The high-level calibration drift exceeded four times the applicable drift specification on several other dates. The data acquisition system automatically considers NOx monitor is considered to be "out-of-control" and the monitor data invalid from the time period beginning when the out-of-range daily calibration drift was recorded until the next calibration drift on these dates that was within four times the applicable drift specification. Section 4.3.1 of 40 CFR Part 60, Appendix F states that "*the beginning of the out-of-control period is the time corresponding to the completion of the daily CD check preceding the daily CD check that results in a CD in excess of four times the allowable limit. The end of the out-of-control period is the time corresponding to the completion of the CD check following corrective action that results in the CDs at both the zero (or low-level) and high-level measurement points*

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being within the corresponding allowable CD limit (i.e. either two times or four times the allowable limit in Appendix B)". RFAAP manually reviewed the hourly average NOx emission records to flag them as "invalid" each period prior to each instance that a calibration drift exceeded four times the applicable drift specification to meet the requirements in Section 4.3.1 of 40 CFR Part 60, Appendix F. All of these instances are included in the "monitor downtime" tabulated in the attachment.

This report is submitted to meet the requirements listed in Title V permit condition XIII.F.3.c because no excess emissions occurred during this reporting period. This report does not include the one-hour average outlet NOx concentrations recorded each hour during this reporting period as past RFAAP reports included. This ATK proprietary information is available for DEQ review at RFAAP but subject to the reporting requirements in Title V permit condition XIII.F.3.c.

If you have any questions, or require additional information, please call Allen Ramsey at (540) 639-8513.

Sincerely,

Paige Holt, Environmental Manager
Alliant Techsystems Inc.

Enclosure

c: Mary Monroe - VA DEQ

11-815-143
PELockard

Coordination:

A. Fillmore

M. A. Miano

L. Diioia

bc: Administrative File
W. Fillmore
A. Ramsey
P. W. Holt
M. Alberts
Environmental File

11-815-143
PELockard

Certification Statement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE: _____ DATE 13 OCT 2011
PRINTED NAME: Wm Byron Penland
TITLE: Lieutenant Colonel, US Army
Commanding
Radford Army Ammunition Plant

SIGNATURE: _____ DATE October 17, 2011
PRINTED NAME: K. D. Holiday
TITLE: Vice President and General Manager
ATK Energetic Systems
Alliant Techsystems Inc.

11-815-143
PLockard

APPENDIX

NOX MONITOR DOWNTIME AND

NOX EXCESS EMISSIONS REPORT

11-815-143
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CONTINUOUS MONITORING SYSTEM PERFORMANCE SUMMARY AND EMISSIONS DATA SUMMARY FOR THE CONTINUOUS NO_x ANALYZER

Third Quarter 2011

SELECTIVE CATALYTIC REDUCTION UNIT
RADFORD ARMY AMMUNITION PLANT
RADFORD, VIRGINIA

Table 1 General information

Pollutant	NO_x
Reporting period	July 1, 2011 through September 30, 2011
Company	RFAAP/ Alliant Techsystems
Emissions Limitation	125 ppmv (one hour average) 2.8 lb/hr (one hour average)
Address	Route 114 Radford, 24143-0100
Monitor Manufacture	Horiba
Monitor Model Number	ENDA-4120L
Date of last CMS Certification or Audit	Cylinder Gas Audit performed on September 13, 2011
Process Unit Description	Scrubber/Absorber followed by Selective Catalytic Reduction for control of NO_x emissions from the manufacture of Nitrocellulose

Source Operating Time = Time in Quarter - Source Down Time

Source operating Time = 2208 - 111 = 2097 Hours

TOTAL SOURCE OPERATING TIME = 2097 Hours

Table 2 Monitoring System Summary Report

Causes of CMS Downtime	Total Down Time (hours)	Percent Unavailable[1]	Comments
a. Monitor Equipment Malfunctions	0.0	0.00%	
b. Non-monitor CMS Equipment Malfunctions	0	0.00%	
c. Calibration/QA	114.0	5.44%	These hours occurred after a daily CD exceeded 4.0 deviations until a "good" CD was conducted and also includes the hours between the last recorded CD< 4.0 deviation and each daily CD > 4.0 deviations. The first calibration conducted each day exceeded > 4 deviations on multiple dates: August 14 & 31; September 21, 23, 27, 29 & 30. The NC process was only operating during 82 of the 114 hours reported as downtime.
d. Other Known causes	7	0.33%	Analyzer maintenance. Quarterly CGA conducted on September 13, 2011
e. Unknown Causes	0	0.00%	
Total	121.00	5.77%	

[1] Percent Unavailable calculated using the following equation:

(CMS Downtime During Source Operations/Source Operating Time) X 100 = Percent Unavailable

121 / 2097.02 X 100 = 5.77%

PERCENT UNAVAILABLE - 5.77%

Total Monitored Operating Time = Time in Quarter - Source Down Time - CMS Down Time During Operations

Total Monitored Operating Time =

2208 - 110.98 - 121.00 = 1976.02

Total Monitored Operating time = 1976.02 Hours

Table 3 Emissions Data Summary

Duration of excess emissions in reporting period due to:	Duration of Excess Emissions (hours)	Percent of Monitored Operating Time[2]	Comments
a. Startup/Shutdown	0	0.00%	
b. Control Equipment Problems	0	0.00%	
c. Process Problems	0	0.00%	
d. Fuel Problems	0	0.00%	
e. Other Unknown Problems	0	0.00%	
f. Unknown Causes	0	0.00%	
Total	0	0.00%	

[2] Percentage of Monitored time calculated using the following equation:

(Duration of Excess Emissions/Monitored Operating Time) x 100 = Percent of Monitored Operating time

0 / 1976.02 X 100 = 0.00%

PERCENT OF MONITORED OPERATING TIME = 0.00%

Table 4 Determination of Excess Emissions Report Requirement

	Yes	No
Is the Percent Unavailability greater than 5% for the Reporting Period?	X	
Is the Total Duration of Excess Emission Greater Than, or Equal To, 1% of the Operating Time? *		X

A description of any changes since last CMS, process, or controls report.

None during this reporting period.

ATK Armament Systems
Energetic Systems
Radford Army Ammunition Plant
Route 114, P.O. Box 1
Radford, VA 24143-0100

www.atk.com

October 4, 2011

Mr. Frank Adams
Virginia Department of Environmental Quality
Blue Ridge Regional Office
3019 Peters Creek Road
Roanoke, VA 24019

Subject: CEMS Quarterly Report, Third Quarter 2011
Radford Army Ammunition Plant, Explosive Waste Incinerators 440/441 CO Analyzers.

Dear Mr. Adams:

Attached please find the Continuous Emissions Monitoring System (CEMS) performance summary and emissions data summary for the CO analyzers for explosive waste incinerators 440/441 at the Radford Army Ammunition Plant (RFAAP). This data summary reports the CEMS performance for the third calendar quarter for 2011 for 440 and for 441 CO analyzers. Refer to the attached reports for the CEMS percent unavailability and the percent excess emissions during monitored operating time during this quarter.

If you have any questions, or require additional information, please call Allen Ramsey at (540) 639-8513.

Sincerely,

Paige Holt, Environmental Manager
Alliant Techsystems Inc.

Enclosure

c: Mary Monroe - VA DEQ

11-815-142
PLockard

Kimberly A. Meuer

Coordination:

K. Meuer

M. A. Miano

L. Difoia

bc: Administrative File
A. Ramsey
P. W. Holt
K Meuer
Environmental File

11-815-142
PLockard

DOCUMENT CERTIFICATION

Facility Name: *Radford Army Ammunition Plant*

Registration No. 20656

Facility Location: Route 114, Radford VA 24143

Type of Submittal Attached: 3Q10 CO CEMS Quarterly Report for Explosive Waste Incinerators 440/441

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name of Responsible Official (Print): Kent Holiday

Title: VP and General Manger Energetics Division

Signature: _____ **Date:** October 13, 2011

Name of Responsible Official (Print): Wm Byron Penland

Title: Lieutenant Colonel, U.S. Army, Commanding

Signature: _____ Date: 13 OCT 2011

11-815-142
PLockard

APPENDIX A

MONTHLY EMISSIONS SUMMARY REPORTS

11-815-142
PLockard

CONTINUOUS EMISSIONS MONITORING SYSTEM PERFORMANCE
SUMMARY AND EMISSIONS DATA SUMMARY
FOR THE CONTINUOUS CO ANALYZER

July 1 - September 31, 2011

HAZARDOUS WASTE COMBUSTOR 440
RADFORD ARMY AMMUNITION PLANT
RADFORD, VIRGINIA

Table 1 General information

Pollutant	CO
Reporting period	July 1 - September 31, 2011
Company	RFAAP/ Alliant Techsystems
Emissions Limitation	100 (7% Corr) ppmv (one hour average)
Address	Route 114 Radford, 24143-0100
Monitor Manufacture	Siemens
Monitor Model Number	Ultramat 5E
Date/Results of last CMS Certification or Audit	August 1 and 2, 2011/Sucessfully met performance specification 4B of 40 CFR 60 Appendix B. The O2 analyzer met the acceptance criteria of a relative accuracy of less than 1.0% O2 absolute difference.
Process Unit Description	Afterburner, Evaporative Cooler, Baghouse, Precooler, Scrubber for control of CO and O_2 emissions from the treatment of waste energetics.

TOTAL SOURCE OPERATING TIME = 1,090.62 Hours

Table 2 Monitoring System Summary Report

Causes of CEMS Downtime	Total Down Time (hours)	Percent Unavailable[1]	Comments
a. Monitor Equipment Malfunctions	0	0%	
b. Non-monitor CEMS Equipment Malfunctions	0	0%	
c. Calibration/QA	0	0%	
d. Other Known causes	0	0%	
e. Unknown Causes	0	0%	
Total	-	0%	

[1]Percent Unavailable calculated using the following equation:

(CEMS Downtime During Source Operations/Source Operating Time) X 100 = Percent Unavailable

0 / 1,090.62 X 100 = 0

PERCENT UNAVAILABLE - 0.00%

440

Total Monitored Operating Time = Time in Quarter - Source Down Time - CEMS Down Time During Operations

Total Monitored Operating time = **1,090.62 Hours**

Table 3 Emissions Data Summary

Duration of excess emissions in reporting period due to:	Duration of Excess Emissions (hours)	Percent of Monitored Operating Time[2]	Comments
a. Startup/Shutdown	0.00	0%	
b. Control Equipment Problems	0.00	0%	
c. Process Problems	0.00	0%	
d. Fuel Problems	0.00	0%	
e. Other Known Problems	0.00	0%	
f. Unknown Causes	0.00	0%	
Total	-	0.00%	

[2]Percentage of Monitored time calculated using the following equation:

(Duration of Excess Emissions/Monitored Operating Time) x 100 = Percent of Monitored Operating time

\- / 1091 X 100 = 0.00%

PERCENT OF MONITORED OPERATING TIME = 0.00%

Table 4 Determination of Excess Emissions Report Requirement

	Yes	No
Is the Percent Unavailability greater than 5% for the Reporting Period?		X
Is the Total Duration of Excess Emission Greater Than, or Equal To, 1% of the Operating Time? *		X

A description of any changes since last CEMS, process, or controls report.

No process changes since last semi-annual report.

* Wording changed for purposes of clarification.

440

CONTINUOUS EMISSIONS MONITORING SYSTEM PERFORMANCE SUMMARY AND EMISSIONS DATA SUMMARY FOR THE CONTINUOUS CO ANALYZER

July 1 - September 31, 2011

HAZARDOUS WASTE COMBUSTOR 441
RADFORD ARMY AMMUNITION PLANT
RADFORD, VIRGINIA

Table 1 General information

Pollutant	CO
Reporting period	July 1 - September 31, 2011
Company	RFAAP/ Alliant Techsystems
Emissions Limitation	100 (7% Corr) ppmv (one hour average)
Address	Route 114 Radford, 24143-0100
Monitor Manufacture	Siemens
Monitor Model Number	Ultramat 5E
Date/Results of last CMS Certification or Audit	August 1 and 2, 2011/Sucessfully met performance specification 4B of 40 CFR 60 Appendix B. The O2 analyzer met the acceptance criteria of a relative accuracy of less than 1.0% O2 absolute difference.
Process Unit Description	Afterburner, Evaporative Cooler, Baghouse, Precooler, Scrubber for control of CO and O_2 emissions from the treatment of waste energetics.

Source Operating Time = Time in Semi-annual - Source Down Time

TOTAL SOURCE OPERATING TIME = 1,599.28 Hours

Table 2 Monitoring System Summary Report

Causes of CEMS Downtime	Total Down Time (hours)	Percent Unavailable[1]	Comments
a. Monitor Equipment Malfunctions	0	0%	
b. Non-monitor CEMS Equipment Malfunctions	0	0%	
c. Calibration/QA	0	0%	
d. Other Known causes	0	0%	
e. Unknown Causes	0	0%	
Total	-	0%	

[1]Percent Unavailable calculated using the following equation:

(CEMS Downtime During Source Operations/Source Operating Time) X 100 = Percent Unavailable

0 / 1,599.28 X 100 = 0

PERCENT UNAVAILABLE - **0.00%**

441

Total Monitored Operating Time = Time in Quarter - Source Down Time - CEMS Down Time During Operations

Total Monitored Operating time = **1,599.28 Hours**

Table 3 Emissions Data Summary

Duration of excess emissions in reporting period due to:	Duration of Excess Emissions (hours)	Percent of Monitored Operating Time[2]	Comments
a. Startup/ Shutdown	0	0%	
b. Control Equipment Problems	0	0%	
c. Process Problems	3.22	0.201%	CO spiked briefly as a result of 3 unplanned power outages. Each incident resulted in the CO rolling average exceeding the limit of 100 ppm for more than an hour. The outages occurred on July 9, August 4 & September 3, 2011.
d. Fuel Problems	0	0%	
e. Other known Problems	0	0%	
f. Unknown Causes	0	0%	
Total	3.22	0.20%	

[2]Percentage of Monitored time calculated using the following equation:

(Duration of Excess Emissions/Monitored Operating Time) x 100 = Percent of Monitored Operating time

3.22 / 1599 X 100 = 0.20%

PERCENT OF MONITORED OPERATING TIME = **0.20%**

Table 4 Determination of Excess Emissions Report Requirement

	Yes	No
Is the Percent Unavailability greater than 5% for the Reporting Period?		X
Is the Total Duration of Excess Emission Greater Than, or Equal To, 1% of the Operating Time? *		X

A description of any changes since last CEMS, process, or controls report.

No process changes since last semi-annual report.

* Wording changed for purposes of clarification.

441

ATK Armament Systems
Energetic Systems
Radford Army Ammunition Plant
Route 114, P.O. Box 1
Radford, VA 24143-0100

www.atk.com

December 29, 2011

Mrs. Mary Monroe
Department of Environmental Quality
Blue Ridge Regional Office
3019 Peters Creek Road
Roanoke, Virginia 24019

Subject: Title V Prompt Deviation Report
Radford Army Ammunition Plant – Reg. No. 20656

Dear Mrs. Monroe:

In follow-up to the report that was made to you on December 21, 2011, attached is the Title V Prompt Deviation Report for the Radford Army Ammunition Plant (RFAAP). This report is being submitted as a result of excess visible emissions in the Acid manufacturing area of our facility.

Please feel free to call Allen Ramsey (540-639-8513) if you have any questions or need additional information.

Very truly yours,

Paige Holt

Paige Holt, Environmental Manager
Alliant Techsystems Inc.

11-815-170
A Ramsey

DEQ
VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

TITLE V PROMPT DEVIATION REPORTING FORM

This form may be submitted to report each deviation required to be reported in accordance with a Virginia DEQ Title V Permit. Any supporting information should be submitted as an attachment and listed below.

Date: **December 29, 2011**

To: **West Central Regional Office, Regional Director**

Source Name: **Radford Army Ammunition Plant** Registration Number: **20656**

Source Address: Route 114, P.O. Box 1 City: Radford State: VA Zip: 24143

This report satisfies our requirement for the written follow-up **Title V Prompt Deviation Report (PDR)** and confirms the deviation initially reported to the **West Central** Regional Office at approximately 09:00 AM on 12/21/2011. The deviation was initially reported within 4-hours. The details of the deviation are described below. This deviation may have caused excess emissions for more than one hour (consistent with specified averaging times) and was not related to a malfunction.

Please contact **Allen Ramsey, Environmental Project Engineer** at **540-639-8513,** ext. with questions or concerns regarding this report.

(Each Field Below Must Be Completed)

Title V Permit Date: **1/15/2004**	Title V Condition #: **X.A.7**	Brief description of permit condition: **Maintain compliance records**		
Start Date: **12/20/2011**	Start Time: **3:00 PM**	End Date: **12/20/2011**	End Time: **4:00 PM**	Duration of event: **1 hrs 0 minutes**
Description of deviation: **On Tuesday, December 20, 2011 at approximately 14:30, Kaye Bland observed visible emissions greater than 20% opacity being emitted from the Acid Area Nitric Fume Scrubber Stack, which is located south of B-Line. She proceeded to contact the Acid Area to alert them and to take corrective action. The emissions occurred for over an hour.**				
Description of monitoring requirements for affected unit(s): **Visible emissions observations**				
Probable cause of deviation: **At the time of this report, the root cause was not known.**				
Corrective measures taken demonstrating timely & appropriate response: **The immediate corrective action was the Acid Area switched on the peroxide feed at the Fume Scrubber and shut down circulation on one of the Pyro acid tanks, which was being prepped for NAC/SAC feed. The NoX fumes subsided approximately 45 minutes later.**				
Preventative measures taken to minimize the probability of the deviation occurring in the future: **The incident is still under review to determine appropriate corrective action to needed to prevent reoccurrence**				

Comments: _____

Attachments: _____

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name of Responsible Official: **WM Byron Penland** Title: **Lieutenant Colonel, US Army Commanding**

(Signature) 3 JAN 2012 (Date)

ATK Armament Systems
Energetic Systems
Radford Army Ammunition Plant
Route 114, P.O. Box 1
Radford, VA 24143-0100

www.atk.com

January 12, 2012

Mr. Frank Adams
Virginia Department of Environmental Quality
Blue Ridge Regional Office
3019 Peters Creek Road
Roanoke, VA 24019

Subject: CMS Quarterly Report, Fourth Quarter 2011
NO_x Abatement System, Radford Army Ammunition Plant

Dear Mr. Adams:

Attached, please find the Continuous Monitoring System (CMS) performance summary and emissions data summary for the NO_x abatement system at the Radford Army Ammunition Plant (RFAAP). This data summary reports the CMS performance for the fourth calendar quarter for 2011. During this quarter the CMS percent unavailability was 13.9% and the percent excess emissions during monitored operating time was 0.0%. For purposes of reporting source down time, the SCR itself is considered to be the "source."

A cylinder gas audit (CGA), using Protocol 1 sample gas was conducted on December 12, 2011 in accordance with 40 CFR 60, Appendix F. The CGA indicated that the monitor error was less than 15%, which is within acceptable limits defined in 40 CFR 60, Appendix F, Section 5.2.3 (2). The records of the CGA are maintained on site as required by Title V permit condition VII.C.3.

A calibration drift was conducted each calendar day during this reporting period that the source was in operation. Section 4.1 of Procedure 1in Appendix F to 40 CFR Part 60—Quality Assurance Procedures states that "*As described in 40 CFR 60.13(d), source owners and operators of CEMS must check, record, and quantify the CD at two concentration values at least once daily (approximately 24 hours) in accordance with the method prescribed by the manufacturer. The CEMS calibration must, as minimum, be adjusted whenever the daily zero (or low-level) CD or the daily high-level CD exceeds two times the limits of the applicable PS's in appendix B of this regulation.*" Section 4.3 of Procedure 1in Appendix F to 40 CFR Part 60—Quality Assurance Procedures states that "*If either the zero (or low-level) or high-level CD result exceeds twice the applicable drift specification in appendix B for five, consecutive, daily periods, the CEMS is out-of-control. If either the zero (or low-level) or high-level CD result exceeds four times the applicable drift specification in appendix B during any CD check, the CEMS is out-of-control. If the CEMS is out-of-control, take necessary corrective action. Following corrective action, repeat the CD checks.*" The high-level calibration drift on several dates exceeded twice the applicable drift specification during this reporting period. Because this did not occur for 5 consecutive days, the NOx monitor is not considered to be "out-of-control" or the monitor data invalid on these dates.

The high-level calibration drift exceeded four times the applicable drift specification on several other dates. The data acquisition system automatically considers NOx monitor is considered to be "out-of-control" and the monitor data invalid from the time period beginning when the out-of-range daily calibration drift was recorded until the next calibration drift on these dates that was within four times the applicable drift specification. Section 4.3.1 of 40 CFR Part 60, Appendix F states that "*the beginning of the out-of-control period is the time corresponding to the completion of the daily CD check preceding the daily CD check that results in a CD in excess of four times the allowable limit. The end of the out-of-control period is the time corresponding to the completion of the CD check following corrective action that results in the CDs at both the zero (or low-level) and high-level measurement points*

12-815-8
ARamsey

being within the corresponding allowable CD limit (i.e. either two times or four times the allowable limit in Appendix B)". RFAAP manually reviewed the hourly average NOx emission records to identify them as "invalid" each period prior to each instance that a calibration drift exceeded four times the applicable drift specification to meet the requirements in Section 4.3.1 of 40 CFR Part 60, Appendix F. All of these instances are included in the "monitor downtime" tabulated in the attachment.

This report is submitted to meet the requirements listed in Title V permit condition XIII.F.3.c because no excess emissions occurred during this reporting period. This report does not include the one-hour average outlet NOx concentrations recorded each hour during this reporting period as past RFAAP reports included. This ATK proprietary information is available for DEQ review at RFAAP but subject to the reporting requirements in Title V permit condition XIII.F.3.c.

If you have any questions, or require additional information, please call Allen Ramsey at (540) 639-8513.

Sincerely,

Paige Holt, Environmental Manager
Alliant Techsystems Inc.

Enclosure

c: Mary Monroe - VA DEQ

12-815-8
ARamsey

Certification Statement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE: _____ DATE 24 JAN 2012
PRINTED NAME: for Wm Byron Fenland
TITLE: Lieutenant Colonel, US Army
Commanding
Radford Army Ammunition Plant

SIGNATURE: _____ DATE January 24, 2012
PRINTED NAME: K. D. Holiday
TITLE: Vice President and General Manager
ATK Energetic Systems
Alliant Techsystems Inc.

12-815-8
ARamsey

APPENDIX

NOX MONITOR DOWNTIME AND

NOX EXCESS EMISSIONS REPORT

12-815-8
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CONTINUOUS MONITORING SYSTEM PERFORMANCE
SUMMARY AND EMISSIONS DATA SUMMARY
FOR THE CONTINUOUS NO_x ANALYZER

Fourth Quarter 2011

SELECTIVE CATALYTIC REDUCTION UNIT
RADFORD ARMY AMMUNITION PLANT
RADFORD, VIRGINIA

Table 1 General Information

Pollutant	NO_x
Reporting period	October 1, 2011 through December 31, 2011
Company	RFAAP/ Alliant Techsystems
Emissions Limitation	125 ppmv (one hour average) 2.8 lb/hr (one hour average)
Address	Route 114 Radford, 24143-0100
Monitor Manufacture	Horiba
Monitor Model Number	ENDA-4120L
Date of last CMS Certification or Audit	Cylinder Gas Audit performed on December 12, 2011 Analyzer passed both the low and high gases within the accuracy limits required.
Process Unit Description	Scrubber/Absorber followed by Selective Catalytic Reduction for control of NO_x emissions from the manufacture of Nitrocellulose

Source Operating Time = Time in Quarter - Source Down Time

TOTAL SOURCE OPERATING TIME = 2048.2 Hours

Table 2 Monitoring System Summary Report

Causes of CMS Downtime	Total Down Time (hours)	Percent Unavailable[1]	Comments
a. Monitor Equipment Malfunctions	0.0	0.00%	
b. Non-monitor CMS Equipment Malfunctions	0	0.00%	
c. Calibration/QA	282.7	13.80%	These hours occurred after a daily CD exceeded 4.0 deviations until a "good" CD was conducted and also includes the hours between the last recorded CD< 4.0 deviation and each daily CD > 4.0 deviations. The first calibration conducted daily exceeded > 4 deviations on 16 dates: October 3, 4, 5, 12, 13. 15, 28, 29; November 1, 2, 6, 7; December 5, 6, 8, 10.
d. Other Known causes	2	0.10%	Analyzer maintenance while CEMS vendor rep conducted annual maintenance activities on October 17, 2011. All other maintenance performed during this quarter occurred while CEMS data was already "invalid" due to failed daily calibration. Those hours of CMS downtime are reported as "Calibration/QA."
e. Unknown Causes	0	0.00%	
Total	284.70	13.90%	

[1] Percent Unavailable calculated using the following equation:

(CMS Downtime During Source Operations/Source Operating Time) X 100 = Percent Unavailable

284.7 / 2048.17333 X 100 = 13.90%

PERCENT UNAVAILABLE - **13.90%**

Total Monitored Operating Time = Time in Quarter - Source Down Time - CMS Down Time During Operations

Total Monitored Operating time = **1,763.5 Hours**

Table 3 Emissions Data Summary

Duration of excess emissions in reporting period due to:	Duration of Excess Emissions (hours)	Percent of Monitored Operating Time[2]	Comments
a. Startup/Shutdown	0	0.00%	
b. Control Equipment Problems	0	0.00%	
c. Process Problems	0	0.00%	
d. Fuel Problems	0	0.00%	
e. Other Unknown Problems	0	0.00%	
f. Unknown Causes	0	0.00%	
Total	0	0.00%	

[2] Percentage of Monitored time calculated using the following equation:

(Duration of Excess Emissions/Monitored Operating Time) x 100 = Percent of Monitored Operating time

PERCENT OF MONITORED OPERATING TIME = **0.00%**

Table 4 Determination of Excess Emissions Report Requirement

	Yes	No
Is the Percent Unavailability greater than 5% for the Reporting Period?	X	
Is the Total Duration of Excess Emission Greater Than, or Equal To, 1% of the Operating Time? *		X

A description of any changes since last CMS, process, or controls report.

None during this reporting period.

ATK Armament Systems
Energetic Systems
Radford Army Ammunition Plant
Route 114, P.O. Box 1
Radford, VA 24143-0100

www.atk.com

January 13, 2012

Mr. Frank Adams
Virginia Department of Environmental Quality
Blue Ridge Regional Office
3019 Peters Creek Road
Roanoke, VA 24019

Subject: CEMS Quarterly Report, Fourth Quarter 2011
Radford Army Ammunition Plant, Explosive Waste Incinerators 440/441 CO Analyzers.

Dear Mr. Adams:

Attached please find the Continuous Emissions Monitoring System (CEMS) performance summary and emissions data summary for the CO analyzers for explosive waste incinerators 440/441 at the Radford Army Ammunition Plant (RFAAP). This data summary reports the CEMS performance for the fourth calendar quarter for 2011 for 440 and for 441 CO analyzers. Refer to the attached reports for the CEMS percent unavailability and the percent excess emissions during monitored operating time during this quarter.

If you have any questions, or require additional information, please call Allen Ramsey at (540) 639-8513.

Sincerely,

Paige Holt, Environmental Manager
Alliant Techsystems Inc.

Enclosure

c: Mary Monroe - VA DEQ

12-815-10
ARamsey

DOCUMENT CERTIFICATION

Facility Name: *Radford Army Ammunition Plant*

Registration No. 20656

Facility Location: Route 114, Radford VA 24143

Type of Submittal Attached: 4Q11 CO CEMS Quarterly Report for Explosive Waste Incinerators 440/441

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name of Responsible Official (Print): Kent Holiday

Title: VP and General Manger Energetics Division

Signature: [signature] **Date:** Jan. 24, 2012

for **Name of Responsible Official (Print):** Wm Byron Penland

Title: Lieutenant Colonel, U.S. Army, Commanding

Signature: [signature] Date: 24 Jan 2012

12-815-10
ARamsey

APPENDIX A

MONTHLY EMISSIONS SUMMARY REPORTS

12-815-10
ARamsey

CONTINUOUS EMISSIONS MONITORING SYSTEM PERFORMANCE SUMMARY AND EMISSIONS DATA SUMMARY FOR THE CONTINUOUS CO ANALYZER

October 1 - December 31, 2011

HAZARDOUS WASTE COMBUSTOR 440
RADFORD ARMY AMMUNITION PLANT
RADFORD, VIRGINIA

Table 1 General information

Pollutant	CO
Reporting period	October 1 - December 31, 2011
Company	RFAAP/ Alliant Techsystems
Emissions Limitation	100 (7% Corr) ppmv (one hour average)
Address	Route 114 Radford, 24143-0100
Monitor Manufacture	Siemens
Monitor Model Number	Ultramat 5E
Date of last CMS Certification or Audit	Most recent RATA conducted and passed on 8/2/2011 and most recent ACA conducted 11/11/2011 and passed for CO low and high range and for % O2.
Process Unit Description	Afterburner, Evaporative Cooler, Baghouse, Precooler, Scrubber for control of CO and O_2 emissions from the treatment of waste energetics.

TOTAL SOURCE OPERATING TIME = 1,049.0 **Hours**

Table 2 Monitoring System Summary Report

Causes of CEMS Downtime	Total Down Time (hours)	Percent Unavailable[1]	Comments
a. Monitor Equipment	0	0%	
b. Non-monitor CEMS Equipment Malfunctions	0	0%	
c. Calibration/QA	0	0%	
d. Other Known causes	0	0%	
e. Unknown Causes	0	0%	
Total	-	0%	

[1]Percent Unavailable calculated using the following equation:

(CEMS Downtime During Source Operations/Source Operating Time) X 100 = Percent Unavailable

0 / 1,049.02 X 100 = 0

PERCENT UNAVAILABLE - **0.00%**

Total Monitored Operating Time = Time in Quarter - Source Down Time - CEMS Down Time During Operations

Total Monitored Operating time = **1,049 Hours**

Table 3 Emissions Data Summary

Duration of excess emissions in reporting period due to:	Duration of Excess Emissions (hours)	Percent of Monitored Operating Time[2]	Comments
a. Startup/Shutdown	0	0%	
b. Control Equipment Problems	0	0%	
c. Process Problems	0	0%	
d. Fuel Problems	0	0%	
e. Other Known Problems	0	0%	
f. Unknown Causes	0	0%	
Total	-	0.00%	

[2]Percentage of Monitored time calculated using the following equation:

(Duration of Excess Emissions/Monitored Operating Time) x 100 = Percent of Monitored Operating time

- / 1049 X 100 = 0.00%

PERCENT OF MONITORED OPERATING TIME = **0.00%**

Table 4 Determination of Excess Emissions Report Requirement

	Yes	No
Is the Percent Unavailability greater than 5% for the Reporting Period?		X
Is the Total Duration of Excess Emission Greater Than, or Equal To, 1% of the Operating Time? *		X

A description of any changes since last CEMS, process, or controls report.

No process changes since last semi-annual report.

* Wording changed for purposes of clarification.

440

CONTINUOUS EMISSIONS MONITORING SYSTEM PERFORMANCE SUMMARY AND EMISSIONS DATA SUMMARY FOR THE CONTINUOUS CO ANALYZER

October 1 - December 31, 2011

HAZARDOUS WASTE COMBUSTOR 441
RADFORD ARMY AMMUNITION PLANT
RADFORD, VIRGINIA

Table 1 General information

Pollutant	CO
Reporting period	October 1 - December 31, 2011
Company	RFAAP/ Alliant Techsystems
Emissions Limitation	100 (7% Corr) ppmv (one hour average)
Address	Route 114 Radford, 24143-0100
Monitor Manufacture	Siemens
Monitor Model Number	Ultramat 5E
Date of last CMS Certification or Audit	Most recent RATA conducted and passed on 8/1/2011 and most recent ACA conducted 11/11/2011 and passed for both low and high range CO and for % O2.
Process Unit Description	Afterburner, Evaporative Cooler, Baghouse, Precooler, Scrubber for control of CO and O_2 emissions from the treatment of waste energetics.

TOTAL SOURCE OPERATING TIME = 1,006.60 Hours

Table 2 Monitoring System Summary Report

Causes of CEMS Downtime	Total Down Time (hours)	Percent Unavailable[1]	Comments
a. Monitor Equipment Malfunctions	0	0.00%	
b. Non-monitor CEMS Equipment Malfunctions	0	0.00%	
c. Calibration/QA	0	0.00%	
d. Other Known causes	0	0.00%	
e. Unknown Causes	0.0	0.00%	
Total	0.0	0.00%	

[1]Percent Unavailable calculated using the following equation:
(CEMS Downtime During Source Operations/Source Operating Time) X 100 = Percent Unavailable

0 / 1,006.60 X 100 = 0.00%

PERCENT UNAVAILABLE - **0.00%**

441

Total Monitored Operating Time = Time in Quarter - Source Down Time - CEMS Down Time During Operations

Total Monitored Operating time = **1,006.60 Hours**

Table 3 Emissions Data Summary

Duration of excess emissions in reporting period due to:	Duration of Excess Emissions (hours)	Percent of Monitored Operating Time[2]	Comments
a. Startup/ Shutdown	0.00	0.00%	
b. Control Equipment Problems	0.00	0.00%	
c. Process Problems	0	0.00%	
d. Fuel Problems	0	0.00%	
e. Other known Problems	0.00	0.00%	
f. Unknown Causes	0	0.00%	
Total	0.00	0.00%	

[2]Percentage of Monitored time calculated using the following equation:

(Duration of Excess Emissions/Monitored Operating Time) x 100 = Percent of Monitored Operating time

- / 1,007 X 100 = 0.00%

PERCENT OF MONITORED OPERATING TIME = **0.00%**

Table 4 Determination of Excess Emissions Report Requirement

	Yes	No
Is the Percent Unavailability greater than 5% for the Reporting Period?		X
Is the Total Duration of Excess Emission Greater Than, or Equal To, 1% of the Operating Time? *		X

A description of any changes since last CEMS, process, or controls report.
No process changes since last semi-annual report.

* Wording changed for purposes of clarification.

441

ATK Armament Systems
Energetic Systems
Radford Army Ammunition Plant
Route 114, P.O. Box 1
Radford, VA 24143-0100

www.atk.com

January 17, 2012

Mr. Robert Weld
Department of Environmental Quality
West Central Regional Office
3019 Peters Creek Road
Roanoke, VA 24019

Re: 2H11 MACT Subpart EEE Report

Dear Mr. Weld:

Enclosed please find the MACT Compliance Report pursuant to 40 CFR 63 Subpart EEE for RCRA Incinerators covering the time period of July 1 through December 31, 2011 for the Radford Army Ammunition Plant (RFAAP).

Should there be any questions regarding this report or any of the attachments herein, please contact Allen Ramsey of my staff, 540-639-8513.

Sincerely,

Paige W. Holt, Environmental Manager
Alliant Techsystems Inc.

Enclosures

12-815-12
ARamsey

DOCUMENT CERTIFICATION

Facility Name: *Radford Army Ammunition Plant*

Registration No. 20656

Facility Location: Route 114, Radford VA 24143

Type of Submittal Attached: 2H11 Semi-annual MACT Subpart EEE Report for Explosive Waste Incinerators 440/441

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name of Responsible Official (Print): Kent Holiday

Title: VP and General Manger Energetics Division

Signature: [signature] **Date:** Jan 25, 2012

for **Name of Responsible Official (Print):** Wm Byron Penland

Title: Lieutenant Colonel, U.S. Army, Commanding

Signature: [signature] **Date:** 26 JAN 2012

12-815-12
ARamsey

NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR HAZARDOUS WASTE COMBUSTORS
SUMMARY REPORT – GASEOUS AND OPACITY EXCESS EMISSION AND CONTINUOUS MONITORING SYSTEM PERFORMANCE

A.1. FACILITY INFORMATION	
Owner/Operator:	US Department of Defense/ Alliant Techsystems
Facility Location:	RFAAP/ Alliant Techsystems
Street address:	Route 114 Radford, 24143-0100
Contact information:	Allen Ramsey Engineer ATK Route 114 Radford, 24143-0100 540-639-8513 allen.ramsey@atk.com
Facility Classification:	Major stationary source of hazardous air pollutants (HAPs)

A.2. APPLICABILITY
Explosive waste incinerators 440/441 are regulated under the Phase I standards of 40 CFR Part 63 Subpart EEE, National Emission Standards for Hazardous Air Pollutants (NESHAP) from Hazardous Waste Combustor (HWC) promulgated on October 12, 2005.

B. IDENTIFICATION OF EACH HAZARDOUS AIR POLLUTANT MONITORED	
HAZARDOUS AIR POLLUTANT	TYPE OF MONITORING
Dioxins/furans (D/F)	Continuous process monitoring and Continuous emissions monitoring systems (CEMS)
Mercury	Continuous process monitoring
Semivolatile metals (SVM) – lead and cadmium	Continuous process monitoring
Low volatile metals (LVM) – arsenic, beryllium, and chromium	Continuous process monitoring
Hydrogen chloride and chlorine (HCl/Cl_2)	Continuous process monitoring
Other metallic hazardous air pollutants (using particulate matter as a surrogate)	Continuous process monitoring
Other organic hazardous air pollutants (using carbon monoxide and hydrocarbons emissions and destruction and removal efficiency as surrogates)	Continuous process monitoring and CEMS

C. REPORTING PERIOD			
Start:	July 1, 2011	End:	December 31, 2011

D. SOURCE INFORMATION	
Affected Source:	Explosive waste incinerator 440
Air Pollution Control:	Fabric filter baghouse, gas pre-coooler, and packed bed scrubber

40 CFR § 63.1219(a)(2)	Mercury	130 µg/dscm [1]
40 CFR § 63.1219(a)(3)	Semivolatile (cadmium and lead) metals (SVM)	230 µg/dscm [1]
40 CFR § 63.1219(a)(4)	Combined arsenic, beryllium, and chromium	92 µg/dscm [1]
40 CFR § 63.1219(a)(6)	Hydrogen chloride and chlorine (HCl/Cl_2)	32 ppmv, as total chlorine, expressed as Cl, dry basis [1]
40 CFR § 63.1219(a)(7)	Particulate matter (PM)	0.013 gr/dscf [1]
40 CFR § 63.1219(a)(5)(i)	Carbon monoxide (CO)	100 ppmv, 1-hour rolling average, dry basis [1]
40 CFR § 63.1219(a)(5)(ii)	Hydrocarbons (HC)	10 ppmv, 1-hour rolling average, dry basis [1]
40 CFR § 63.1219(c)(1)	Destruction and removal efficiency (DRE)	99.99%

[1] Corrected to seven percent oxygen

E.2. Operating Parameter Limits

In accordance with 40 CFR § 63.1209, RFAAP has established the following operating parameter limits (OPLs) to demonstrate continuous compliance with the emission standards of the HWC NESHAP. These OPLs were established during the most recent comprehensive performance test (CPT) and were documented in RFAAP's Notification of Compliance (NOC) dated April 22, 2010.

Operating Parameter	Limit	Averaging Period [1]	Applicable Emission Standards
Minimum kiln exit temperature	1,306 °F	HRA	HC, DRE, D/F
Minimum afterburner temperature	1,605 °F	HRA	HC, DRE, D/F
Maximum fabric filter inlet temperature	356 °F	HRA	LVM, SVM
Maximum stack CO concentration [2]	100 ppmv, corrected to 7% O_2	HRA	HC, DRE
Maximum flue gas flow rate	50 ft/sec	HRA	HC, DRE, D/F, PM, SVM, LVM, HCl/Cl_2
Maximum hazardous waste feed rate	2,061 lb/hr	HRA	HC, DRE, D/F
Maximum kiln pressure	Below atmospheric	Instan-taneous w/ 10 sec. delay	Fugitive emissions
Maximum mercury feed rate [3]	0.00040 lb/hr	12-hr RA	Mercury
Minimum flue gas flow rate [3]	20 ft/sec	12-hr RA	Mercury
Maximum ash feed rate	48 lb/hr	12-hr RA	PM
Maximum low volatile metals feed rate	1.7 lb/hr	12-hr RA	LVM
Maximum semi-volatile metals feed rate	6.4 lb/hr	12-hr RA	SVM
Operating Parameter	**Limit**	**Averaging Period [1]**	**Applicable Emission Standards**
Maximum chlorine feed rate	19 lb/hr	12-hr RA	SVM, LVM, HCl/Cl_2
Minimum scrubber differential pressure drop [4]	0.15 in. w.c.	HRA	HCl/Cl_2

Operating Parameter	Limit	Averaging Period [1]	Applicable Emission Standards
Minimum neutralization tank pH	6.8	HRA	HCl/Cl_2
Minimum total water flow rate to the precooler/scrubber	70 gpm	HRA	HCl/Cl_2

1 HRA refers to hourly rolling average, 12-hr RA refers to 12-hour rolling average.
2 RFAAP monitors the stack CO concentration as an indicator of proper operation of the waste firing system.
3 Together, these two OPLs demonstrate that maximum mercury theoretical concentration is always less than the emissions standard of 130 µg/dscm, corrected to 7% O2
4 This limit is based on manufacturer's recommendations, design specifications, or HWC MACT requirements rather than established based on CPT demonstrations.

F. and G. Monitoring Equipment

In accordance with 40 CFR § 63.1206(c)(3), RFAAP operates the unit with a functioning system that immediately and automatically cuts off the hazardous waste feed when OPLs or emission standards are exceeded. An immediate and automatic cutoff is also triggered when the span value of any process monitor is exceeded. Any malfunctions of the monitoring equipment or automatic waste feed cutoff system will also initiate an immediate and automatic cutoff of hazardous waste feed.

Description	Instrument Type	Manufacturer	Model	Audit
Low volatility metals feed rate	Coriolis flowmeter	Micro Motion	DL-100	Monthly
Semi-volatile metals feed rate				
Total hazardous waste feed rate				
Total chlorine/chloride feed rate				
Ash feed rate				
Mercury feed rate				
Kiln exit temperature	Thermo-couple	Chromel-Alumel	Type K	Monthly
Kiln pressure	Pressure trans-mitter	Rosemount	1151 DR	Quarterly
Afterburner temperature	Thermo-couple	Chromel-Alumel	Type K	Monthly
Fabric filter inlet temperature	Thermo-couple	Iron Constantan	Type J	Quarterly
Stack CO concentration	CO analyzer	Siemens	Ultramat 5E	Daily
Flue gas velocity	Annubar flowmeter	Dietrich Standard	Diamond II	Monthly
Neutralization tank pH	pH analyzer	Honeywell/L&N	7082	Monthly
Total water flow rate to the pre-cooler/scrubber	Liquid mass flowmeter	Brooks	7400	Semi-annual
Scrubber differential pressure	Pressure trans-mitter	Taylor	504T	Quarterly

H. Operating Time

Total operating time of affected source during the reporting period:	2140 Hours

I. Emission Data Summary

Total duration of excess emissions/parameter exceedances:	1.67 Hours
Percent of total source operating time during which excess emissions/parameter exceedances occurred [1]:	0.078 %
Summary of causes of excess emissions/parameter exceedances:	
Startup/shutdown/malfunction	52 %

Control equipment problems	0 %
Process problems	0 %
Other known causes	48 %
Other unknown causes	0 %

[1] The duration shown represents the total duration of excess emissions and OPL exceedances, which are used to indicate potential excess emissions.

J. Continuous Monitoring Systems (CMS) Performance Summary

Total duration of CMS downtime:	0 Hours
Percent of total source operating time during which CMS were down:	0 %
Summary of causes of CMS downtime:	
Monitoring equipment malfunctions	0 %
Non-monitoring equipment malfunctions	0 %
Quality assurance/quality control calibrations	0 %
Other known causes	0 %
Other unknown causes	0 %

K. Changes in Continuous Monitoring Systems, Processes, or Controls

Any changes in CMS, processes, or controls since the last reporting period?	☐ Yes ☒ No
If yes, describe changes:	

Startups, Shutdowns, and Malfunctions

In accordance with 40 CFR § 63.1206(c)(2), RFAAP has prepared and at all times operates according to a startup, shutdown, and malfunction (SSM) plan as specified in 40 CFR § 63.6(e)(3). During the reporting period, all actions taken during startup, shutdown, and malfunction periods were consistent with the procedures specified in the SSM plan.

Instances Where Actions Taken Were Not Consistent With the SSM Plan

None

Malfunctions

Description of Malfunction	Duration	Occurrences
Stack velocity flow meter failed to span value	46 minutes	3
Low cooling water flow caused baghouse bypass valve to open when AWFCO tripped	6 minutes	1

D. Source Information

Affected Source:	Explosive waste incinerator 441
Air Pollution Control:	Fabric filter baghouse, gas pre-cooler, and packed bed scrubber

E. 1. Applicable Emission Standards

40 CFR § 63.1219(a)(1)(ii)	Dioxins/furans (D/F)	0.40 ng TEQ/dscm [2]

E. 1. Applicable Emission Standards

40 CFR § 63.1219(a)(1)(ii)	Dioxins/furans (D/F)	0.40 ng TEQ/dscm [1]
40 CFR § 63.1219(a)(2)	Mercury	130 µg/dscm [1]
40 CFR § 63.1219(a)(3)	Semivolatile (cadmium and lead) metals (SVM)	230 µg/dscm [1]
40 CFR § 63.1219(a)(4)	Combined arsenic, beryllium, and chromium	92 µg/dscm [1]
40 CFR § 63.1219(a)(6)	Hydrogen chloride and chlorine (HCl/Cl_2)	32 ppmv, as total chlorine, expressed as Cl, dry basis [1]
40 CFR § 63.1219(a)(7)	Particulate matter (PM)	0.013 gr/dscf [1]
40 CFR § 63.1219(a)(5)(i)	Carbon monoxide (CO)	100 ppmv, 1-hour rolling average, dry basis [1]
40 CFR § 63.1219(a)(5)(ii)	Hydrocarbons (HC)	10 ppmv, 1-hour rolling average, dry basis [1]
40 CFR § 63.1219(c)(1)	Destruction and removal efficiency (DRE)	99.99%

[1] Corrected to seven percent oxygen

E.2. Operating Parameter Limits

In accordance with 40 CFR § 63.1209, RFAAP has established the following operating parameter limits (OPLs) to demonstrate continuous compliance with the emission standards of the HWC NESHAP. These OPLs were established during the most recent comprehensive performance test (CPT) and were documented in RFAAP's Notification of Compliance (NOC) dated April 22, 2010.

Operating Parameter	Limit	Averaging Period [1]	Applicable Emission Standards
Minimum kiln exit temperature	1,306 °F	HRA	HC, DRE, D/F
Minimum afterburner temperature	1,605 °F	HRA	HC, DRE, D/F
Maximum fabric filter inlet temperature	356 °F	HRA	LVM, SVM
Maximum stack CO concentration [2]	100 ppmv, corrected to 7% O_2 from	HRA	HC, DRE
Maximum flue gas flow rate	50 ft/sec	HRA	HC, DRE, D/F, PM, SVM, LVM, HCl/Cl_2
Maximum hazardous waste feed rate	2,061 lb/hr	HRA	HC, DRE, D/F
Maximum low volatile metals feed rate	1.7 lb/hr	12-hr RA	LVM
Maximum kiln pressure	Below atmospheric	Instan-taneous w/ 10 sec. delay	Fugitive emissions
Maximum mercury feed rate [3]	0.00040 lb/hr	12-hr RA	Mercury
Minimum flue gas flow rate [3]	20 ft/sec	12-hr RA	Mercury
Maximum ash feed rate	48 lb/hr	12-hr RA	PM
Maximum semi-volatile metals feed rate	6.4 lb/hr	12-hr RA	SVM
Maximum chlorine feed rate	19 lb/hr	12-hr RA	SVM, LVM, HCl/Cl_2
Minimum scrubber differential pressure drop [4]	0.15 in. w.c.	HRA	HCl/Cl_2

Minimum neutralization tank pH	6.8	HRA	HCl/Cl_2
Minimum total water flow rate to the precooler/scrubber	70 gpm	HRA	HCl/Cl_2

1 HRA refers to hourly rolling average, 12-hr RA refers to 12-hour rolling average.
2 RFAAP monitors the stack CO concentration as an indicator of proper operation of the waste firing system.
3 Together, these two OPLs demonstrate that maximum mercury theoretical concentration is always less than the emissions standard of 130 µg/dscm, corrected to 7% O2
4 This limit is based on manufacturer's recommendations, design specifications, or HWC MACT requirements rather than established based on CPT demonstrations.

F. AND G. MONITORING EQUIPMENT

In accordance with 40 CFR § 63.1206(c)(3), RFAAP operates the unit with a functioning system that immediately and automatically cuts off the hazardous waste feed when OPLs or emission standards are exceeded. An immediate and automatic cutoff is also triggered when the span value of any process monitor is exceeded. Any malfunctions of the monitoring equipment or automatic waste feed cutoff system will also initiate an immediate and automatic cutoff of hazardous waste feed.

DESCRIPTION	INSTRUMENT TYPE	MANUFACTURER	MODEL	AUDIT
Low volatility metals feed rate	Coriolis flowmeter	Micro Motion	DL-100	Monthly
Semi-volatile metals feed rate				
Total hazardous waste feed rate				
Total chlorine/chloride feed rate				
Ash feed rate				
Mercury feed rate				
Kiln exit temperature	Thermo-couple	Chromel-Alumel	Type K	Monthly
Kiln pressure	Pressure trans-mitter	Rosemount	1151 DR	Quarterly
Afterburner temperature	Thermo-couple	Chromel-Alumel	Type K	Monthly
Fabric filter inlet temperature	Thermo-couple	Iron Constantan	Type J	Quarterly
Stack CO concentration	CO analyzer	Siemens	Ultramat 5E	Daily
Flue gas velocity	Annubar flowmeter	Dietrich Standard	Diamond II	Monthly
Neutralization tank pH	pH analyzer	Honeywell/L&N	7082	Monthly
Total water flow rate to the pre-cooler/scrubber	Liquid mass flowmeter	Brooks	7400	Semi-annual
Scrubber differential pressure	Pressure trans-mitter	Taylor	504T	Quarterly

H. OPERATING TIME

Total operating time of affected source during the reporting period:	2606 Hours

I. EMISSION DATA SUMMARY

Total duration of excess emissions/parameter exceedances:	1.7 Hours
Percent of total source operating time during which excess emissions/parameter exceedances occurred [1]:	0.065 %
Summary of causes of excess emissions/parameter exceedances:	
Startup/shutdown/malfunction	80.4 %
Control equipment problems	0 %
Process problems	0 %

Other known causes	19.6 %
Other unknown causes	0 %

[1] The duration shown represents the total duration of excess emissions and OPL exceedances, which are used to indicate potential excess emissions.

J. Continuous Monitoring Systems (CMS) Performance Summary

Total duration of CMS downtime:	0 Hours
Percent of total source operating time during which CMS were down:	0 %
Summary of causes of CMS downtime:	
Monitoring equipment malfunctions	0 %
Non-monitoring equipment malfunctions	0 %
Quality assurance/quality control calibrations	0 %
Other known causes	0 %
Other unknown causes	0 %

K. Changes in Continuous Monitoring Systems, Processes, or Controls

Any changes in CMS, processes, or controls since the last reporting period?	☐ Yes ☒ No
If yes, describe changes:	

Startups, Shutdowns, and Malfunctions

In accordance with 40 CFR § 63.1206(c)(2), RFAAP has prepared and at all times operates according to a startup, shutdown, and malfunction (SSM) plan as specified in 40 CFR § 63.6(e)(3). During the reporting period, all actions taken during startup, shutdown, and malfunction periods were consistent with the procedures specified in the SSM plan.

Instances Where Actions Taken Were Not Consistent With the SSM Plan

None

Malfunctions

Description of Malfunction	Duration	Occurrences
Unexpected power outage resulted in CO concentration spike and baghouse bypass	80 minutes	4
Control system communication error resulted in CO concentration spike	1 minute	1
Propellant reaction in Kiln caused kiln pressure to exceed OPL after AWFCO activated	1 minute	1

ATK Armament Systems
Energetic Systems
Radford Army Ammunition Plant
Route 114, P.O. Box 1
Radford, VA 24143-0100

www.atk.com

November 29, 2011

Mr. Frank Adams
Department of Environmental Quality
West Central Regional Office
3019 Peters Creek Road
Roanoke, Virginia 24019

Subject: New Carbon Adsorption System (Building 2600) Emissions for November 22, 2011

Dear Mr. Adams

This letter is in follow-up to our verbal communication on November 22nd in regards to the notification of the malfunction at the new Carbon Adsorption System (Building 2600) on November 22, 2011. Below is a description of the event and the responses taken by RFAAP to prevent a future occurrence.

Description of Event: Early on the morning of Tuesday, November 22, 2011, contractors assisting with the startup of the new Activated Carbon system noted that the instrument monitoring the outlet concentration of ether and ethanol from the new activated carbon system was reading very high. After quickly reviewing the operation trends, steaming of the beds was manually initiated to remove the ether from the activated carbon. Trends of the operation showed that steam had not flowed into the carbon beds since approximately 4 pm the afternoon before. Further review of the adsorption monitoring data indicated that breakthrough likely occurred on one bed shortly after midnight because the system indicated that steaming was occurring but no steam was flowing. However, that bed was not the bed being monitored at the time of breakthrough. Between approximately 12:30 am and 8:30 am, it is believed that the exhaust from at least one bed was higher than the permitted limit of 100 ppm. As a precaution, the National Response Center and DEQ were notified of a potential ether release. Based on subsequent review and data interpolation, it appears that the reportable quantity of ether (100 lb.) may also have been exceeded.

Possible/Root Cause(s): Several root causes are being investigated including PLC malfunction due to a sector failure and changes to a control system that were made late on the afternoon of November 21.

Operations were already shutdown at the time the problem was discovered. The process was not restarted until a complete re-steaming cycle was performed on each carbon bed. The Carbon Adsorption System was closely monitored during the following 24-hour process.

Please feel free to call Allen Ramsey (540-639-8513) if you have any questions or need additional information.

Sincerely,

Paige Holt, Environmental Manager
Alliant Techsystems Inc.

11-815-162
A. Ramsey

Coordination: L. DiIoia

bc: Administrative File
P. Holt
L. DiIoia
Env File

11815-162
A. Ramsey

ATK Armament Systems
Energetic Systems
Radford Army Ammunition Plant
Route 114, P.O. Box 1
Radford, VA 24143-0100

www.atk.com

August 4, 2011

Ms. Mary Monroe
Department of Environmental Quality
West Central Regional Office
3019 Peters Creek Road
Roanoke, Virginia 24019

Subject: Malfunction of Acid Tank Farm Scrubber at Radford Army Ammunition Plant

Dear Ms. Monroe:

This is in follow-up to the incident involving a malfunction of the Acid Tank Farm Scrubber at the Radford Army Ammunition Plant (RFAAP) that was reported to you on July 22, 2011. Below is a description of the incident.

Emissions of nitrogen oxides (NOx) from nitric acid tanks located in the Acid Area of the facility are controlled using a chilled water scrubber. On July 22, 2011, excessive visible emissions of NOx from the scrubber stack were observed. Upon examination, it was determined that the water chiller had tripped off. Further investigation indicated that the chiller had tripped off due to excessive head pressure caused by the high ambient temperature within the building housing the chiller system. The excess visible emissions subsided after the chiller was restarted. Although the duration of this incident is unknown, the excess visible emissions likely occurred for more than one hour.

In response to this incident, we have increased the temperature set point of the chilled water from 40° F to 50° F. The higher temperature set point provides adequate control and places less stress on the chiller system. We have also trained area operators to check the chiller and scrubber stack on a routine basis to ensure the system is operating properly and take action if necessary. We also plan to improve the ventilation of the chiller building to reduce ambient temperature within the building.

Please feel free to call Phil Lockard (540-639-8344) if you have any questions or need additional information.

Very truly yours,

Phillip Lockard for

Paige Holt, Environmental Manager
Alliant Techsystems Inc.

11-815-108
PE Lockard

Coordination: for
L. DiIoia

bc: Administrative File
P. Holt
T. Frazier
A. Fillmore
L. DiIoia
Env File

11-815-108
PE Lockard

ATK Armament Systems
Energetic Systems
Radford Army Ammunition Plant
Route 114, P.O. Box 1
Radford, VA 24143-0100

www.atk.com

September 1, 2011

Frank Adams
Department of Environmental Quality
Blue Ridge Regional Office
3019 Peters Creek Road
Roanoke, VA 24019

Dear Mr. Adams:

As we have discussed, RFAAP has identified a potential concern at the incinerator. As specified in our Feedstream Analysis plan, we routinely collect grab samples of the propellant being processed. These are composited and analyzed monthly as specified in the waste sampling section of our plan. During the month of July, the composite sample was not removed, which resulted in additional material from August being put in the same container. We recognized the situation and removed the sample, but it contains material from both July and August. We expect to report this on our semi- annual compliance report, but I wanted to make you aware first. Copies of the cover page and the applicable page from our Feedstream Analysis plan are attached. Please let me know if there is any additional information you need.

Sincerely,

Paige Holt, Environmental Manager
Alliant Techsystems Inc.

11-815-123
PHolt

ALLIANT AMMUNITION AND POWDER COMPANY, LLC
FEEDSTREAM ANALYSIS PLAN

Prepared for:

Alliant Ammunition and Powder Company LLC
Radford Army Ammunition Plant
Radford, Virginia

Prepared by:

Franklin Engineering Group, Inc.
Franklin, Tennessee 37064

Alliant Ammuniton and Powder Co., LLC

September 2003

3.0 WASTE SAMPLING

Alliant Ammunition and Powder Company, LLC, the permitted operator of the treatment and storage facilities, has prepared a feedstream sampling plan to help ensure collection of representative samples for analysis, as required by 40 CFR 63.1209(c)(2)(v). The intent of the sampling plan is to provide representative data to maintain compliance with the Incinerator Operation Program and applicable state and federal regulations. Feed rates for the incinerator are developed based on the analytical results associated with the sampling plan and methodologies. All sampling will be conducted in accordance with the facility's sampling and analysis plan and maintained as part of the Facility Operating Record.

Samples for determination of incinerator feed rates are collected on a daily basis, Monday through Friday during the daylight shift, as waste is loaded onto the trolley conveyor in preparation to be ground and incinerated. The operator collects grab samples from tubs of waste propellant of each waste Group that is being processed. The grab samples are collected into separate sample bagcontainers for each Group. Each sample container is labeled with the month, the propellant type, the "composite" notation for sample type, and the sampler's initials. All samples for each waste Group are composited, a sample number affixed to the container and analyzed on a monthly basis. This ensures the analysis for each waste Group is current and up to data as required by 40 CFR 63.1209(c)(2)(vi).

The daily grab samples of batch materials are collected throughout the month for each of the 19 Groups that are incinerated are kept in a cabinet designated for samples. At the end of the month, the operator splits the composite sample for one of the waste Groups and numbers the container. Both of these samples are sent to the laboratory with the other waste Group composite samples to be analyzed for the month. This duplicate sample provides quality assurance/quality control information on the analysis technologies. The composite samples are analyzed as described in Section 4.0, Waste Analysis Requirements.

If DEG or TEG water (Groups 5 and 6) are used for slurry makeup water, samples are collected daily. At the end of the month, all daily samples of DEG or TEG water are composited into one sample per Group. These composites are then analyzed as described in Section 4.0, Waste Analysis Requirements.

August 6, 2012

Mr. Robert Weld
Department of Environmental Quality
Blue Ridge Regional Office
3019 Peters Creek Road
Roanoke, VA 24019

Subject: 2012 Title V Annual Compliance Certificate and 1H2012 Title V Semi-Annual Monitoring Report

Dear Mr. Weld:

Enclosed please find the:

- DEQ form titled Semi-Annual Monitoring Report, including Plant-Wide Summary of Deviations and DEQ form titled Failure To Monitor, Keep Records Or Report, for the period of January 1 through June 30, 2012, and
- DEQ form Title V Annual Compliance Certification Reporting Form for the period of January 1 through June 30, 2012

As of July 1, 2012, Alliant Techsystems Inc (ATK), no longer operates the Radford Army Ammunition Plant (RFAAP). It is our understanding that the permittee on December 30, 2012 will be required to produce the Title V annual compliance certificate for RFAAP as stated in Title V permit §XIII (D) *"Exclusive of any reporting required to assure compliance with the terms and conditions of this permit, the permittee shall submit to EPA and to DEQ no later than March 1 each calendar year a certification of compliance with all terms and conditions of this permit including emission limitation standards and work practices"*. As the operator of the major stationary source for part of the year, ATK has chosen to submit an annual compliance certificate for the period of ATK's operation of RFAAP from January 1, 2012 to June 30, 2012. This is consistent with the language of §114(a)(3) of the Clean Air Act which refers to the preparer of the compliance certificate as the owner or operator of the source. This report will be available to the current operating contractor, BAE Systems Ordnance Systems Inc, for their preparation of a separate annual compliance certificate to be certified for their period of performance from July 1, 2012 to December 31, 2012.

The 1H2012 Semi-Annual Monitoring Report includes the attached RFAAP Plant-wide Summary of Deviations spreadsheet, per DEQ approval following discussions between Jody Lambert of DEQ and Paige Holt of RFAAP on May 22, 2004. This spreadsheet includes deviations from permit requirements along with information that indicates that the affected facility is maintained and operated during these incidents in a manner consistent with air pollution control practices for minimizing emissions for opacity events. This spreadsheet only contains incidents that lasted for less than 60 consecutive minutes which have not previously been reported.

On January 9, 2012, Judge Paul L. Friedman of the United States District Court for District of Columbia ("D.C. District Court") issued a decision in which he invalidated and "vacated" EPA's delay of the effective date of the National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Industrial, Commercial and Institutional Boilers and Process Heaters; 76 Fed. Reg. 15,608 (Mar. 21, 2011) ("Boiler MACT"). EPA had formally delayed the effective date of the Boiler MACT in the Industrial, Commercial, and Institutional Boilers and Process Heaters and Commercial and Industrial Solid Waste Incineration Units: Final rules; Delay of effective dates, 76 Fed. Reg. 28,662 (May 18, 2011) (the "Delay Notice"). Under the Boiler MACT, initial notifications for existing affected sources were due on or before September 21, 2011, or 120 days after the effective date. However, as of September 21, 2011, and throughout this reporting period the Delay Notice was still in effect. We do not believe that our failure to previously submit an initial notification on or before September 21, 2011 constitutes a deviation from any permit requirements because we reasonably relied on the Delay Notice. Nothing in this report concedes a violation or waives any defenses that might be available. Moreover, RFAAP wishes to clarify that it appropriately did not

submit the initial notification based on information and belief formed after reasonable inquiry in light of the Delay Notice and EPA's own example notification form on its website that contained the following statement:

> *Because of the current stay of the effective date of the Boiler MACT, the initial notification and any other forms pertaining to this rule will not be due until further notice.*

RFAAP is not reporting a deviation of Title V permit condition X.A.1 during this reporting period because the reporting requirement to submit the boiler MACT initial notification on or before September 21, 2011 was not an applicable requirement of the MACT regulation for fossil fuel fired boilers, based on the above understanding of the impact of the January 9, 2012 decision.

Should there be any questions regarding this report or any of the attachments herein, please contact Laura Habersack at 540-831-4801.

Sincerely,

Paige W. Holt, Environmental Manager
Alliant Techsystems Inc.

Enclosures:

DEQ Form - Title V Semi-Annual Monitoring Reporting
DEQ Form - FAILURE TO MONITOR, KEEP RECORDS OR REPORT
DEQ Form - "Other" Deviations
DEQ Form - Title V Annual Compliance Certification Reporting
RFAAP Plant-wide Summary of Deviations spreadsheet

Copies of Previously Submitted Reports-

1Q12 NOx CEM Excess Emission Report- RFAAP Nitrocellulose Process
1Q12 CO CEM Excess Emission Report- RFAAP Explosive Waste Incinerators
2Q12 NOx CEM Excess Emission Report- RFAAP Nitrocellulose Process
2Q12 CO CEM Excess Emission Report- RFAAP Explosive Waste Incinerators
1H12 MACT Subpart EEE Report- RFAAP Explosive Waste Incinerators
2-15-2012 AOP Fluid Level Tower Control
2-21-2012 Notice of Emergency Safety Vent Opening
2-28-2012 NOx Emissions from SCR Exceeded Hourly Average on 01-29-12
2-28-2012 Excess Opacity from the Powerhouse at RFAAP
3-26-2012 Malfunction of the Fan Motor Resulting in NOx Emissions from the Piccolo Scrubber
4-23-2012 Notice of Emergency Safety Vent Opening
5-24-2012 Notice of Emergency Safety Vent Opening
6-29-2012 Fume-off at Spent Battery 3003 Resulting in NOx Exceedence

cc: Clean Air Act Title V Compliance Certification (3AP00)
U.S. Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Permit Condition No. & DESCRIPTION OF REQUIREMENT	DESCRIPTION OF DEVIATION (including date)	REASON FOR DEVIATION & CORRECTIVE ACTION TAKEN
VII.B.4 The piccolo scrubber shall be equipped with a device to continuously measure the scrubber liquid flow rate. The monitoring device shall be installed, maintained, calibrated and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations. The monitoring device shall be provided with adequate access for inspection and shall be in operation when the scrubber is operating.	Algae buildup on the rotameters used to measure the piccolo scrubber liquid flow rate prevented personnel from easily determining the rate on the dates during this reporting period. The piccolo scrubber was in service on 1/1-1/4, 1/23-1/24, 1/30-2/4, 2/11-2/12, 2/13, 3/11-3/12, and 3/20 before April 2012. The observed condition of the rotameter indicates that it was not maintained with approved procedures as required by this condition even though the rotameter was in operation when the scrubber was in service.	After this deviation was identified in January 2012 during preparation of the semi-annual report, initial steps were initiated to clean the rotameter so that it would be able to indicate flow when the piccolo scrubber was in service during 2012. Cleaning improved the condition of the rotameter so flow could be observed but the algae grew back. The rotameter was replaced with a flow meter in April 2012 as shown below.  Rotameter with algae growth  Flow meter installed April 2012

Permit Condition No. & DESCRIPTION OF REQUIREMENT	DESCRIPTION OF DEVIATION (including date)	REASON FOR DEVIATION & CORRECTIVE ACTION TAKEN
VII.A.4 The temperature of the fired heater acid gas outlet preceding the SCR catalyst column shall be maintained between 500°F and 650°F during operation.	Temperatures are recorded hourly on daily inspection sheets and continuously monitored and recorded in site data historian (refer to Active Factory tag ID 3055-TI-647.) Nitrocellulose production can be monitored by Active Factory tag ID 3045-L1-QI-290 and 3045-L2-QI-290. The SCR fired heater acid gas outlet temperature was less than 500°F during the following events:	RFAAP determines intermittent compliance with this permit condition because operating logs indicate that the SCR was in operation when the recorded temperature was below 500°F during these instances. The SCR was taken out of service or put back in service on the same dates that these low temperature events occurred and the temperature remained above 500°F during operation for the rest of the reporting period. The nitrocellulose production lines were shutdown during each of the incidents.

Date	Start	End	Reason
1/4/2012	16:49	18:05	Returning from the Piccolo to the SCR following malfunction freeze event. Nitrocellulose production lines were shutdown.
1/24/2012	11:33	12:38	*Malfunction*: Low differential pressure at the fume fan caused the furnace to shut off. Nitrocellulose production lines were shutdown.
2/11/2012	17:01	17:15	*Malfunction*: Power failure after pine tree fell on lines. Nitrocellulose production lines were shutdown.
3/20/2012	9:49	10:15	*Malfunction*: Fan at the gas fired heater failed. Nitrocellulose production lines were shutdown.
6/25/2012 - 6/26/2012	9:45	00:11	SCR was off-line on 6/25 to replace level controller and Piccolo scrubber was in operation. Piccolo shut down at 9:45AM to switch back to the SCR. SCR heater not to temperature until 00:11. Interlock was overridden. Nitrocellulose production lines were shutdown.

FAILURE TO MONITOR, KEEP RECORDS OR REPORT **Registration No. 20656** **Page 3 of 4**
Submitted as Part of Semi-Annual Monitoring Report **Reporting Period: 1/1/2012 to 6/30/2012**

Permit Condition No. & DESCRIPTION OF REQUIREMENT	DESCRIPTION OF DEVIATION (including date)	REASON FOR DEVIATION & CORRECTIVE ACTION TAKEN
VII.B.3. The tray scrubber shall be equipped with devices to continuously measure the scrubber liquid flow rate and the differential pressure drop across the scrubber. Each monitoring device shall be installed, maintained, calibrated and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations. Each monitoring device shall be provided with adequate access for inspection and shall be in operation when the scrubber is operating.	The tray scrubber is equipped with devices to measure the liquid flow rate and pressure drop across the scrubber. The devices are maintained calibrated and operated with approved procedures. Intermittently the pressure drop across the scrubber was recorded as zero during the reporting period.	RFAAP determines intermittent compliance with this permit condition because operating logs indicate that the SCR was in operation when the pressure drop across the scrubber recorded zero. It is believed that this was due to a data transmission error between the scrubber and the Active Factory server.

12-815-103
LHabersack

FAILURE TO MONITOR, KEEP RECORDS OR REPORT **Registration No. 20656** **Page 4 of 4**
Submitted as Part of Semi-Annual Monitoring Report **Reporting Period: 1/1/2012 to 6/30/2012**

Permit Condition No. & DESCRIPTION OF REQUIREMENT	DESCRIPTION OF DEVIATION (including date)	REASON FOR DEVIATION & CORRECTIVE ACTION TAKEN
IX.B.1 The permittee shall comply with the operating requirements and operating parameter limits specified in the September 29, 2003 or most current Documentation of Compliance prepared pursuant to 40 CFR 63, Subpart EEE, Section 63.1211; with the operating requirements and operating parameter limits specified in the Notification of Compliance prepared pursuant to 40 CFR 63, Subpart EEE, Section 63.1210; and with monitoring requirements in accordance with 40 CFR 63, Subpart EEE, Section 63.1209. IX.C The permittee shall maintain records in accordance with 40 CFR 63, Subpart EEE, Section 63.1211. IX.E The permittee shall comply with reporting requirements in accordance with 40 CFR 63, Subpart EEE, Section 63.1211.	RFAAP did not have and maintain an ESV operating plan during the beginning of this reporting period as required by 40 CFR 63, Subpart EEE, Section 63.1206(c)(4)(ii) because our initial evaluation had shown that the baghouse bypasses were not ESVs. RFAAP is reporting this as a deviation to these permit conditions because these permit conditions reference section 63.1211 which, in turn, references sections 63.1206 and 63.1209 of Subpart EEE. RFAAP determines intermittent compliance with IX.B.1 as uncorrected CO values >3000 ppmv may not be recorded as 10,000 ppmv as required by 63.1209(a)(3)(i) for determining hourly rolling average CO.	These deviations were self-identified and reported to VDEQ in 2010 following an environmental audit of Subpart EEE requirements. When this MACT requirement first took effect, both RFAAP and VDEQ did not consider the baghouse bypass vent to be an ESV subject to the Section 63.1206(c)(4) requirements; however, RFAAP determined that the requirements in 63.1206(c)(4)(iv) to report ESV openings and in 63.1206(c)(4)(ii)to maintain a ESV operating plan did apply. RFAAP re-identified this gap in its records and reporting systems during preparation of the 2H11 Title V semi-annual report. RFAAP has an ESV operating plan that includes procedures for reporting each instance which was completed in February 2012. RFAAP completed training on these ESV requirements and a review of recordkeeping for all affected personnel during the last week of May 2012. CO values greater than 3000 ppmv are consistently recorded as 10000 ppmv in determining the hourly rolling average effective April 2012.

FAILURE TO MONITOR, KEEP RECORDS OR REPORT **Registration No. 20656**
Submitted as Part of Semi-Annual Monitoring Report **Reporting Period: 1/1/2012 to 6/30/2012**

Condition No. & Description of Requirement	**Description of Deviation** (time, emission unit, description of event, cause)	**Description of Associated Monitoring Requirement**	**Description of corrective measures taken** (demonstrating a timely & appropriate response)
III.A.5 Boilers 2, 3, 4, and/or 5 visible emissions < 20% opacity	Excess opacity from Boilers 2, 3, 4, and/or 5 as reported in attached summary of deviations	Other material information provided by COMS voluntarily installed and placed in operation during 2007.	Followed SOP as reported in attached summary of deviations
X.A.7 Visible emissions . . . shall not exceed 20 % except during one six-minute period in any one hour in which visible emissions shall not exceed 60 %.	Excess opacity from: • Acid truck/rail car unloading • Acid tank farm scrubber • Piccolo scrubber • Flyash baghouse and truck loading as reported in the attached summary of deviations.	Routine visible emissions observations of emission sources	Followed SOP, conducted root cause analysis, and applied corrective actions when necessary as reported in attached summary of deviations

(Report deviations which may have caused excess emissions for more than one hour on a prompt deviation report form, not here)

12-815-103
LHabersack

Plant-wide Summary of Deviation (Powerhouse and WPI events are tracked on a separate spreadsheet.)						
Date	Start Time	Area	Equipment	Description of Deviation and Root Cause	Duration	Magnitude of Emissions or Opacity, If Known	Immediate Response and Corrective Action
1/24/2012	12:20 PM	NC	SCR to Piccolo	Low Differential Pressure at fume fan caused the furnace to shut off. Fumes diverted to the Piccolo. Opacity observed from the Piccolo stack.	25 mins	>50%	Followed SOP.
3/15/2012	10:08AM	Acid	Tank Farm Scrubber	NOx Opacity from the acid tank farm scrubber stack	55 mins	>20%	Followed SOP, Turned on peroxide. Suspected cause is pyro addition from the NC area.
3/20/2012	10:00AM	Acid	Tank Farm Scrubber	NOx out of acid tank farm scrubber stack	4 hours intermittent	>20-25%	Followed SOP, Continued maintenance on the peroxide pump, decreased acid transfer operations
3/28/2012	3:50 AM	Solvents	Oulet Analyzer, Activated Carbon Recovery System	Flame on inlet analyzer went out during standby exhaust analayzer. At that time the inlet analyster was at 47 pmm and the outlet was at 8 ppm.	13 mins	None	Followed SOP. Re-lit flame and recalibrated system.
3/29/2012	8:45 AM	PH	Fly ash truck load	Initial water conditioning insufficent to contain dust.	15 mins	>20%	Adjusted water flow to suppress dusting.
4/16/2012	9:55 PM	Acid	SCR	Fume off resulted in exceeding Out NOx monitor range (250 ppm) for 1.5 minutes	1.5 mins	no excess opacity noted	Followed SOP. Increased ammonia feed. Fume off in L1 Spent Acid tank.
4/17/2012	11:00 AM	Acid	SCR	HRA of Outlet Nox >125 ppm ocurred during 1 hour of SCR maintanence.	240 mins	no excess opacity noted	Ammonia valve failed. The SCR remained in-line and the water flow was increased to scrubber to minimize emissions.
4/24/2012	1:30PM	PH	Baghouse	Baghouse emissions due to inspection and maintenance	12 mins	>50%	Minimized cleaning activities to reduce intensity and duration.
5/16/2012	11:45AM	PH	Baghouse	Loading flyash truck. Damp ash not flowing well from silo to ash feeder. Operator was tapping ash chute with hammer and pipe plug on chute clean-out fell off. Flyash flowed out clean-out port until plug was reinstalled.	15 mins	>20	Pipe plug was recovered and replaced. It was tightened with pipe wrench.
6/4/2012	2:00PM	Acid	Truck Unloading	Sulfuric acid fume cloud	20 mins	>60%	Oleum truck unloaded contained incorrect acid. Oleum was 67% instead of 20%. This caused a large plume of sulfuric acid. It was determined that Dupont shipped incorrect acid.
6/20/2012	2:00 PM	Acid	Rail Car Unloading	Sulfuric acid fume cloud	10 mins	>20	Oleum rail car unloaded. Air pressure was shut off when the fume cloud was observed.
6/28/2012	3:45 PM	Acid	Rail Car Unloading	Sulfuric acid fume cloud	10 mins	>20	Oleum rail car unloaded. Air pressure was shut off when the fume cloud was observed.

Powerhouse Visible Emissions Summary										
		Unit								
Date	Start Time	#1	#2	#3	#4	#5	Description of Deviation and Root Cause	Duration	Maximum 6-minute average measured (% Opacity)	Immediate Response and Corrective Action
1/2/2012	8:30 PM			X			Rebalancing load between boilers	12 min	36.5	Followed SOP.
1/3/2012	6:12 AM		X				Soot Blowing	12 min	25	Adjusted fan per SOP.
1/4/2012	6:48 AM				X		Soot Blowing	12 min	23.1	Followed SOP.
1/14/2012	6:12 AM		X				Soot Blowing	12 min	35.6	Adjusted fan per SOP.
1/15/2012	8:18 PM		X	X	X	X	Soot Blowing	12 min	24.7	Followed SOP.
1/26/2012	1:48 AM			X			Sudden loss of coal (Feeder Failure)	12 min	42.7	Followed SOP.
1/28/2012	2:00 PM		X	X	X	X	Soot Blowing	24 min	41.6	Followed SOP.
1/29/2012	2:12 PM		X	X	X	X	Soot Blowing	12 min	28.7	Followed SOP.
2/4/2012	4:12 PM		X				Shut down of Boiler #2	12 min	42.3	Followed SOP.
2/11/2012	12:36 PM				X		Boiler 4 Copes-Vulcan Feedwater valve failed	12 min	24.3	Followed SOP. Placed 2B mill into service and dropped 4B mill; Instrument tech contacted to repair valve
2/13/2012	8:24 PM		X	X	X	X	Soot Blowing	18 min	22.4	Followed SOP.
2/14/2012	8:42 PM					X	Shut down of 5B Mill	18 min	24.6	Followed SOP. Reduced Mill load and shut down.
2/17/2012	7:18 AM		X				Shut down of Boiler #2	18 min	38.3	Followed SOP.
2/17/2012	7:12 PM					X	5B Coal Pipe stopped up	30 min	65.6	Followed SOP. Oil used to support pressure while pluggage was cleared.
2/18/2012	4:06 PM			X			Failure of ESP Transformer-Rectifier set	18 min	22.1	Followed SOP. Put Boiler 2 online and dropped 3B mill.
2/19/2012	6:18 AM					X	Soot blowing in Boiler #5	12 min	29.1	Followed SOP.
2/19/2012	2:06 PM				X	X	Soot blowing in Boiler #4 and #5	24 min	34.1	Followed SOP.
2/19/2012	10:44 PM					X	Soot blowing in Boiler #5	12 min	31	Followed SOP.
2/20/2012	6:12 AM					X	Soot blowing in Boiler #5	12 min	30.9	Followed SOP.
2/21/2012	3:48 AM					X	Start up of 2B Mill failed. Restarted 5B.	18 min	48.3	Followed SOP.
2/21/2012	5:06 PM					X	Soot Blowing	18 min	29.8	Followed SOP.
2/21/2012	11:15 PM					X	Feedwater valve failure	18 min	26.3	Followed SOP. Moved load to the other boilers and dropped one mill on Boiler 5.
2/22/2012	6:01 AM		X	X			Soot Blowing in Boilers #2 and #3	12 min	33.5	Followed SOP.
2/25/2012	6:11 AM			X			Soot Blowing	12 min	21.3	Followed SOP.
2/25/2012	12:42 PM					X	Rock Jammed in 5A Feeder	102 mins	79.4	Followed SOP, attempted to insert oil guns but blocked, tried 2B feeder but inlet gate would not open. Used fuel in boilers 3 and 4. NC area took tubs off. Cleared oil gun pipes in boiler 5, lit lower guns, removed rock, restarted feeder 5.
2/26/2012	12:54 PM		X				Sootblowing	18 mins	64.7	Followed SOP.
2/26/2012	11:06 PM		X				Sootblowing	12 mins	38.3	Followed SOP.
3/1/2012	10:00PM				X		4A Exhauster Coupling Failed	12 mins	50.3	Followed SOP, shut down mill, Determined that a contractor had placed the insert in the wrong direction when replaced.

Powerhouse Visible Emissions Summary										
		Unit								
Date	Start Time	#1	#2	#3	#4	#5	Description of Deviation and Root Cause	Duration	Maximum 6-minute average measured (% Opacity)	Immediate Response and Corrective Action
3/3/2012	2:18 PM		X				Change in differential pressure in ESP caused ash disturbance.	18 mins	20.7	Followed SOP.
3/6/2012	3:30PM					X	Shutdown Boiler #5 and start up 2B Mill	12 mins	32.8	Followed SOP.
3/8/2012	08:54AM		X				Shutdown 2B Pulverizer	12 mins	42.0	Followed SOP, Ash exceeded ESP capacity
3/11/2012	05:36PM		X				Rock Jammed in 2A Feeder	12 mins	35.1	Followed SOP.
3/19/2012	03:18AM					X	5A Coal feeder failure	12 mins	35.9	Followed SOP. Malfunction due toggle switch and inlet valve closed. Change the switch to improve feedback and ensure performance.
4/10/2012	6:12AM					X	Sootblowing with two mills online	12 mins	24.8	Followed SOP.
4/18/2012	8:06AM						ID and FD Fans were started following boiler shutdown for annual manintance. Ash disturbance caused spike in opacity before ESP could manage it following start-up.	6 mins	69.3	Boiler fans and ESP were started per SOP but corrective actions from this start-up prompted change in start-up strategy.
5/3/2012	6:06AM			X			Sootblowing	18 mins	34.3	Followed SOP. Blow one side of the unit at a time and waited until opacity returned to normal before blowing the other side.
5/13/2012	4:24 AM				X		Start-up boiler #2, shut-down boiler #4.	12 mins	31.6	Followed SOP. Non-consecutive 6 minute periods. Fan 4 bearing issue.
5/16/2012	8:36 PM					X	Cleaning chute between 5A Feeder and 5A Mill. Coal flow interrupted and fire lost in boiler.	12mins	48.8	Followed SOP for boiler restart.
5/18/2012	2:54 PM		X				Soot Blowing	12 mins	30.6	Followed SOP
5/22/2012	6:06AM				X		Scaper failed. 4A Mill overloaded with rejects.	12 mins	25.2	Followed SOP. Put 5B Mill on while 4A scrapers were replaced. 4A Mill placed back in service per SOP.
5/24/2012	12:48 PM			X			Change in differential pressure in ESP caused ash disturbance during maintenance.	18 mins	29.3	Followed SOP.
5/26/2012	10:24 AM				X		Boiler Operator used an air lancing rod to clean water tubes on Boiler #4.	12 mins	23.7	Operator discontinued cleaning of the water tubes on Boiler #4 once opacity increased.
5/26/2012	3:24 PM		X				Shutdown of Boiler #2 at 3:50pm due to lack of steam load.	30 mins	30.7	Followed SOP.
5/27/2012	10:18AM					X	#5 Sudden loss of coal (mill failure)	18 mins	24.3	Followed SOP.
5/27/2012	6:30 PM				X		#4A Feeder failure Sudden loss of coal (feeder failure)	12 mins	25.5	Followed SOP
5/29/2012	5:00 PM				X	X	Electrical storm tripped Boilers 4 & 5	18 mins	47	Restarted boilers per SOP
6/2/2012	7:36PM				X		Shutdown of Boiler # 4 for annual inspection	12 mins	31.2	Followed SOP.
6/3/2012	6:30AM					X	ID Fan Failure. #5 Boiler Fans.	42 mins	59.1	Followed SOP.
6/4/2012	3:24AM					X	ID Fan Failure. #5 Boiler Fans.	12 mins	41.7	Followed SOP.
6/16/2012	5:30AM			X		X	Soot Blowing	12 mins	34.5	Followed SOP.
6/17/2012	5:12 AM			X		X	Soot Blowing	12 mins	22.3	Followed SOP.
6/19/2012	1:54PM						Soot Blowing	12 mins	23.9	Followed SOP.
6/19/2012	5:00PM					X	Soot Blowing	12 mins	27.5	Followed SOP.

Powerhouse Visible Emissions Summary										
		Unit								
Date	Start Time	#1	#2	#3	#4	#5	Description of Deviation and Root Cause	Duration	Maximum 6-minute average measured (% Opacity)	Immediate Response and Corrective Action
6/23/2012	10:36 AM		X				Boiler Startup	30 mins	33.5	Followed SOP.
6/24/2012	1:12AM			X			Boiler Shutdown	12 mins	28.2	Followed SOP.
6/25/2012	4:12AM					X	Start up of 5B mill to reduce Boiler 2 load	12 mins	25.7	Followed SOP.
6/26/2012	5:30AM		X			X	Adjusting loads between Boilers 2 and 5, four mills on line and load fluctuating	12 mins	24.6	Followed SOP.
6/26/2012	6:36AM		X				Shutdown 2B Mill	12 mins	21	Followed SOP.
6/29/2012	9:00 PM						Power Failure Caused Boiler Shutdown	UNK	UNK	Power failure due to rare Derecho storm caused two boilers to shutdown. Opacity during event is unknown. The opacity monitor workstation was returned to service at 1:06AM on 6/30. The opacity was 5% at that time.
6/30/2012	5:18 PM					X	No. 5 forced draft variable frequency drive tripped off line due to clogged air filter.	12 mins	34	Followed SOP.

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

TITLE V ANNUAL COMPLIANCE CERTIFICATION REPORTING FORM

This form may be submitted to report the compliance status for the permit conditions in a Virginia DEQ Title V Permit. Each field below must be completed and the appropriate box must be checked.
Note: If compliance was not continuous, this certification is not complete unless DEQ and EPA have a copy of the Semi-annual Monitoring Report(s) covering the period where compliance was not continuous (either previously received (DEQ) or attached to this report (EPA)).

Date: Monday, August 06, 2012

To: DEQ's Blue Ridge Regional Office, Regional Director

CC: Clean Air Act Title V Compliance Certification (3AP00)
U. S. Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Source Name: RFAAP Registration Number: 20656 and 21258

Source Address: SR 114 City: Radford State: VA Zip: 24143

This report satisfies our requirement for the **Title V Annual Compliance Certification Report (ACC)** and identifies all deviations and periods of non-compliance for the reporting period indicated.

For questions or concerns regarding this report, please contact the following individual:

Contact Name: Laura Habersack Contact Title: Environmental Engineer Phone Number: 540-831-4801 Ext._____

Reporting Period Dates:
1/1/12 through 6/30/12

Title V Permit Effective Date: 1/15/04
Each condition is hereby identified and included by reference into this certification.

☐ 1. This source was in continuous compliance with all permit conditions contained in the Title V permit during the entire reporting period. The method(s) used to determine compliance is/are the method(s) specified in the Title V permit.

☒ 2. This source was in continuous compliance with all permit conditions contained in the Title V permit during the entire reporting period EXCEPT for the deviations identified in Title V Semi-annual Monitoring Report(s) dated 8/6/2012.
The reports are incorporated by reference into this certification and have either been previously submitted or are attached. Unless otherwise indicated and described in the Title V Semi-annual Monitoring Report(s), the method(s) used to determine compliance is/are the method(s) specified in the Title V permit.

Comments:
(if additional space is needed, please attach supporting documentation and indicate below)

Attachments (list here): 1H2012 Title V Semi-Annual Monitoring Report and Attachments

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name of Responsible Official: Michael A. Miano Title: Operations Manager, ATK

Signature: Michael A. Miano Date: 8/9/12

Name of Responsible Official: Wm. Byron Penland Title: Commander, LTC, US Army

Signature: Wm. Byron Penland Date: 10 Aug 2012

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

TITLE V SEMI-ANNUAL MONITORING REPORTING FORM

This form may be submitted to report all deviations from the conditions in a Virginia DEQ Title V Permit. All Prompt Deviation Reports and/or any supporting information should be submitted as an attachment and listed below.

Date: **Monday, August 6, 2012**

To: **West Central Regional Office, Regional Director**

Source Name: **Radford Army Ammuniton Plant** Registration Number: **20656**

Source Address: Route 114, P.O. Box 1 City: Radford State: VA Zip: 24143

This report satisfies our requirement for the **Title V Semi-Annual Monitoring Report (SAMR)**. This report identifies all deviations and periods of non-compliance for the reporting period indicated. All deviations and periods of non-compliance, for the reporting period indicated, have been addressed in this Semi-Annual Monitoring Report.

Please contact **Laura Habersack, Engineer** at **540-831-4801**, ext. with questions or concerns regarding this report.

(Each Field Below Must be Completed and the Appropriate Box Must be Checked)

Reporting Period Dates: **1/1/2012** through **6/30/2012** Title V Permit Effective Date: **January 15, 2004**

☐ 1. During the reporting period, ALL monitoring and associated record keeping requirements in the Title V Permit were met and no deviations from these requirements or any other conditions occurred.

☒ 2. During the reporting period, all monitoring and associated recordkeeping requirements in the Title V Permit were met and no deviations from these requirements or any other terms or conditions occurred, EXCEPT for the deviations identified below:

- ☒ A. Deviations were addressed in **CEM Excess Emission Report(s)** Dated: **4/17/2012 4/24/2012 7/12/2012 7/13/2012**
- ☐ B. Deviations were addressed in **Fuel Reports** Dated: ____ ____ ____ ____
- ☒ C. Deviations were addressed in **MACT Reports** Dated: **7/24/2012 7/24/2012** ____ ____
- ☒ D. Deviations were addressed in **Malfunction Reports** Dated: **2/15/2012 2/28/2012 2/28/2012 3/26/2012**
- ☐ E. Deviations were addressed in **Prompt Deviation Reports** Dated: ____ ____ ____ ____
- ☒ F. "**Other Deviations**," which were not previously reported, are described in the **Attachment(s)** to this report.

Comments: Malfunction reports con't: 6/29/2012 and ESV opening Reports: 2/21/2012, 4/23/2012, 5/24/2012

Attachments: DEQ forms Failure to Monitor, Keep Records or Report and "Other Deviations"; Plant-wide Summary of Deviations; 3Q and 4Q CEM Excess Emission Reports- NC SCR NOx and 440/441 EWI CO; 2H11 MACT EEE

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name of Responsible Official: Michael A. Miano Title: Operations Manager, ATK

Signature: MM Miano Date: 8/9/12

Name of Responsible Official: Wm. Byron Penland Title: Commander, LTC, US Army

Signature: Wm Byron Penland Date: 10 AUG 2012

ORDNANCE SYSTEMS INC.
4050 Peppers Ferry Road, Route 114
Radford, VA 24141
Mail: P.O. Box 1, Radford, VA 24143
Telephone (540) 639-7323

28 February 2013

Mr. Frank Adams
Blue Ridge Regional Office
Virginia Department of Environmental Quality
3019 Peters Creek Road
Roanoke, VA 24019

Subject: 2012 Title V Annual Compliance Certification (July 1 through December 31, 2012)
2H2012 Title V Semiannual Monitoring Report
Radford Army Ammunition Plant, Radford, Virginia (Permit VA-20656)

Dear Mr. Adams:

BAE Systems Ordnance Systems Inc. (OSI), operating contractor for Radford Army Ammunition Plant (RFAAP) respectfully submits this 2H2012 Title V Semiannual Monitoring Report and Title V Annual Compliance Certification for the period July 1 through December 31, 2012 to satisfy the reporting requirements of Title V permit condition XIII.D. This is the first Title V Semiannual Monitoring Report and Annual Compliance Certification submitted by BAE Systems OSI since becoming the operating contractor of Radford Army Ammunition Plant effective July 1, 2012. BAE Systems OSI is providing the compliance certification for the period of July 1 through December 31, 2012. Alliant Techsystems Inc. (ATK) operated the facility for the period of January 1 through June 30, 2012 and had previously submitted the Title V Annual Compliance Certification for this period to VDEQ and EPA Region III on 6 August 2012 (appended to this submittal as an attachment for reference).

To satisfy the Title V reporting requirements, the 2H2012 Semi-Annual Monitoring Report includes the attached *Plant-Wide Summary of Deviations Spreadsheet* and the *Powerhouse Visible Emissions Summary*, as per previous agreement between RFAAP and VDEQ on 22 May 2004. These spreadsheets include deviations from permit requirements along with information that indicates that the affected facility is maintained and operated during these incidents in a manner consistent with air pollution control practices for minimizing emissions for opacity events. The *Plant-Wide Summary of Deviations Spreadsheet* contains only incidents that lasted for less than 60 consecutive minutes and which have not previously been reported. The *Powerhouse Visible Emissions Summary* contains incidents not previously reported which are deviations from Title V permit condition III.A.5 that "*visible emissions from each of the boiler stacks shall not exceed 20 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 60 percent opacity*." The short-form of the Annual Compliance Certification has been completed for the period of 2012 that BAE Systems OSI has been the operating contractor for RFAAP (July 1 through December 31, 2012), as is consistent with historical submittals for the facility; records documenting compliance with all individual Title V permit conditions are maintained on site and are available for VDEQ review.

On 25 June 2012, ATK submitted a request to VDEQ to amend the Title V permit for RFAAP to delete all provisions of the permit governing New River Energetics (NRE). In the interim, ATK has provided additional submittals to VDEQ as requested with "information as necessary to support the two facilities not being under common control." At the time of this Annual Compliance Certification and Semiannual Monitoring Report submittal, the separation request has not yet been formally granted by VDEQ. In order to satisfy the reporting requirements, ATK has provided an Annual Compliance Certification and Semiannual Monitoring Report

addressing the Title V permit Condition VIII (*Process Equipment Requirements – NRE: New River Energetics*), and these documents are appended to this report as attachments.

If you should have any questions or comments please contact MaryAnn Bogucki at 540-639-7688 or maryann.bogucki@baesystems.com.

Respectfully,

Jay Stewart
Environmental Manager

Coordination with RFAAP Staff:

Len DiIoia, Jr.

Enclosures: Additional Certification Document
Title V Annual Compliance Certification Reporting Form
Title V Semiannual Monitoring Reporting Form
Attachment 1: Failure to Monitor, Keep Records or Report Form
Attachment 2: "Other" Deviations Forms
Att. 2.a: Plant-wide Summary of Deviations Spreadsheet
Att. 2.b: Powerhouse Visible Emissions Summary
Attachment 3: Copies of Previously Submitted Reports (July 1 through December 31, 2012)
Att. 3.a: CEM Excess Emissions Quarterly Reports
3Q2012 CMS Report for the Nitrocellulose Process NOx Abatement System
4Q2012 CMS Report for the Nitrocellulose Process NOx Abatement System
3Q2012 CEMS Report for the Explosive Waste Incinerators (440/441)
4Q2012 CEMS Report for the Explosive Waste Incinerators (440/441)
Att. 3.b: MACT Reports (Explosive Waste Incinerators 440/441)
2H2012 MACT Subpart EEE (submitted by BAE Systems OSI on 20 February 2013)
Att. 3.c: Prompt Deviation Forms
09-12-2012 Notification of Excess Emissions from the Acid Storage Area
10-09-2012 Notification of Piccolo Scrubber Deviation at the Nitrocellulose Process
10-26-2012 Notification of Powerhouse Excess Opacity Deviation
11-13-2012 Notification of Powerhouse Excess Opacity Deviation
Att. 3.d: Malfunction Follow-Up Reports
07-02-2012 Fume-off and Excess NOx Emissions at the Nitrocellulose Process
07-09-2012 Notification of SCR Malfunction at the Nitrocellulose Process
07-29-2012 Notification of Powerhouse COMS Malfunction
07-31-2012 Notification of 441Explosive Waste Incinerator Malfunction
08-03-2012 Notification of 440 Explosive Waste Incinerator ESV Opening
08-16-2012 Notification of SCR Malfunction at the Nitrocellulose Process
10-09-2012 Notification of SCR Malfunction at the Nitrocellulose Process
11-08-2012 Notification of Powerhouse Excess Opacity Malfunction (November 8-9)
11-26-2012 Notification of Powerhouse Excess Opacity Malfunction
12-05-2012 Notification of Powerhouse Excess Opacity Malfunction (December 5-7)
12-20-2012 Notification of Powerhouse Excess Opacity Malfunction
12-29-2012 Notification of Powerhouse Excess Opacity Malfunction
Attachment 4: Title V Annual Compliance Certification (July 1 – Dec. 31, 2012) and 2H2012 Title V Semiannual Monitoring Certification for Permit Condition VIII (Process Equipment Requirements, NRE: New River Energetics) Prepared by ATK (21 February 2013)
Attachment 5: 2012 Title V Annual Compliance Certification submitted to VDEQ by ATK (6 Aug 2012)

cc: RFAAP ACO Staff/ DiIoia
File
USEPA Region III

FedEx: #7947 9010 7729 (VDEQ)
#7947 6113 2241 (USEPA Region III)

BAE SYSTEMS

ORDNANCE SYSTEMS INC.
4050 Peppers Ferry Road, Route 114
Radford, VA 24141
Mail: P.O. Box 1, Radford, VA 24143
Telephone (540) 639-7323

Certification of 28 February 2013 submission to Frank Adams (Virginia Department of Environmental Quality) of the 2H2012 Title V Semiannual Monitoring Report and Annual Compliance Certification for the period of July 1 through December 31, 2012, as required under Permit VA20656 - Radford Army Ammunition Plant, Radford, Virginia.

DOCUMENT CERTIFICATION FORM

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE:		DATE:	27 FEB 2013
NAME:	WM BYRON PENLAND	REGISTRATION NUMBER:	20656
TITLE:	LTC, COMMANDER	ADDRESS:	PO Box 1
COMPANY:	U.S. ARMY		Radford, VA 24143
SIGNATURE:		DATE:	27 Feb '13
NAME:	Todd D. Hayes	REGISTRATION NUMBER:	20656
TITLE:	OSI, Deputy VP Ops & EHSS Governance	ADDRESS:	PO Box 1
COMPANY:	BAE Systems Ordnance Systems Inc.		Radford, VA 24143
PHONE:	(423) 578-6369		
EMAIL:	todd.hayes@baesystems.com		

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

TITLE V ANNUAL COMPLIANCE CERTIFICATION REPORTING FORM

This form may be submitted to report the compliance status for the permit conditions in a Virginia DEQ Title V Permit. Each field below must be completed and the appropriate box must be checked.
Note: If compliance was not continuous, this certification is not complete unless DEQ and EPA have a copy of the Semi-annual Monitoring Report(s) covering the period where compliance was not continuous (either previously received (DEQ) or attached to this report (EPA)).

Date: Thursday, February 28, 2013

To: DEQ's Blue Ridge Regional Office, Regional Director

CC: Clean Air Act Title V Compliance Certification (3AP00)
U. S. Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Source Name: Radford Army Ammunition Plant Registration Number: 20656

Source Address: Route 114, P.O. Box 1 City: Radford State: VA Zip: 24143

This report satisfies our requirement for the Title V Annual Compliance Certification Report (ACC) and identifies all deviations and periods of non-compliance for the reporting period indicated.

For questions or concerns regarding this report, please contact the following individual:

Contact Name: MaryAnn Bogucki Contact Title: Environmental Affairs Specialist - Air Phone Number: 540-639-7688 Ext.-

Reporting Period Dates:
7/1/2012 through 12/31/2012

Title V Permit Effective Date: January 15, 2004
Each condition is hereby identified and included by reference into this certification.

☐ 1. This source was in continuous compliance with all permit conditions contained in the Title V permit during the entire reporting period. The method(s) used to determine compliance is/are the method(s) specified in the Title V permit.

☒ 2. This source was in continuous compliance with all permit conditions contained in the Title V permit during the entire reporting period EXCEPT for the deviations identified in Title V Semi-annual Monitoring Report(s) dated 02/28/2013 (2H2012; submitted by BAE Systems OSI, current operating contractor effective 1 July 2012).
The reports are incorporated by reference into this certification and have either been previously submitted or are attached. Unless otherwise indicated and described in the Title V Semi-annual Monitoring Report(s), the method(s) used to determine compliance is/are the method(s) specified in the Title V permit.

Comments:
(if additional space is needed, please attach supporting documentation and indicate below)

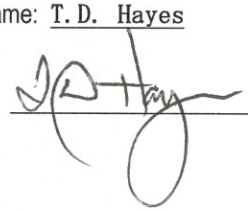
This is the first Title V Annual Compliance Certification submitted by BAE Systems Ordnance Systems Inc. (OSI) since becoming the operating contractor of Radford Army Ammunition Plant effective July 1, 2012. BAE Systems OSI is providing the compliance certification for the period of July 1 through December 2012. Alliant Techsystems Inc. (ATK) operated the facility for the period of January 1 through June 30, 2012 and had previously submitted the Title V Annual Compliance Certification and Semiannual Monitoring Report for this period to VDEQ and EPA Region III on 6 August 2012 (appended to this submittal as an attachment).

Attachments (list here): 1H2012 Title V Semiannual Monitoring Report and Attachments (submitted by ATK on 6 August 2012); 2H2012 Title V Semiannual Monitoring Report and Attachments (submitted by BAE Systems OSI on 28 February 2013)

An additional Title V Annual Compliance Certification has been prepared by ATK for Permit Condition VIII (Process Equipment Requirements - NRE: New River Energetics) for the period of July 1 through December 31, 2012, and is appended to this submittal as an attachment.

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Responsible Official: Printed Name: T. D. Hayes Title: **OSI, Deputy VP Ops & EHSS Gov**

Signature:  Date: 27 Feb '13

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

TITLE V SEMI-ANNUAL MONITORING REPORTING FORM

This form may be submitted to report all deviations from the conditions in a Virginia DEQ Title V Permit. All Prompt Deviation Reports and/or any supporting information should be submitted as an attachment and listed below.

Date: **Thursday, February 28, 2013**

To**: West Central Regional Office, Regional Director**

Source Name: **Radford Army Ammunition Plant** Registration Number: **20656**

Source Address: Route 114, P.O. Box 1 City: Radford State: VA Zip: 24143

This report satisfies our requirement for the **Title V Semi-Annual Monitoring Report (SAMR)**. This report identifies all deviations and periods of non-compliance for the reporting period indicated. All deviations and periods of non-compliance, for the reporting period indicated, have been addressed in this Semi-Annual Monitoring Report.

Please contact **MaryAnn Bogucki**, **Environmental Affairs Specialist - Air** at **540-639-7688**, ext. -- with questions or concerns regarding this report.

(Each Field Below Must be Completed and the Appropriate Box Must be Checked)

Reporting Period Dates: **7/1/2012** through **12/31/2012** Title V Permit Effective Date: **January 15, 2004**

☐ 1. During the reporting period, ALL monitoring and associated record keeping requirements in the Title V Permit were met and no deviations from these requirements or any other conditions occurred.

☒ 2. During the reporting period, all monitoring and associated recordkeeping requirements in the Title V Permit were met and no deviations from these requirements or any other terms or conditions occurred, EXCEPT for the deviations identified below:

- ☒ A. Deviations were addressed in **CEM Excess Emission Report(s)** Dated: **10/25/2012 10/25/2012 1/30/2013 01/30/2013**
- ☐ B. Deviations were addressed in **Fuel Reports** Dated: _____ _____ _____ _____
- ☒ C. Deviations were addressed in **MACT Reports** Dated: **2/20/2013** _____ _____ _____
- ☒ D. Deviations were addressed in **Malfunction Reports** Dated: **7/2/2012 7/9/2012 7/29/2012 7/31/2012**
- ☒ E. Deviations were addressed in **Prompt Deviation Reports** Dated: **9/12/2012 10/9/2012 10/26/2012 11/13/2012**
- ☒ F. "**Other Deviations**," which were not previously reported, are described in the **Attachment(s)** to this report.

Comments:
2.D, continued: (Malfunction Reports): Dated 08-03-2012, 08-16-2012, 10-09-2012, 11-08-2012, 11-26-2012, 12-05-2012, 12-20-2012 and 12-29-2012.

Attachments: This is the first Title V Semi-Annual Monitoring Report submitted by BAE Systems Ordnance Systems Inc. (OSI) since becoming the operating contractor of Radford Army Ammunition Plant effective July 1, 2012.

Previously submitted copies of deviation and malfunction reports are appended to this 2H2012 Semiannual Monitoring Report as Attachments 3.c and 3.d. "Other Deviations" are presented on the "Failure to Monitor, Keep Records or Report Form" (Attachment 1), on the Plant-wide Summary of Deviations form (Attachment 2.a) and on the Powerhouse Visible Emissions Summary (Attachment 2.b).

An additional Title V Semi-Annual Monitoring certification has been prepared by ATK for Permit Condition VIII (Process Equipment Requirements - NRE: New River Energetics), and is appended to this submittal as an attachment.

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name of Responsible Official: **T.D. Hayes** Title: **OSI, Deputy VP Ops & EHSS Governance**

(Signature)

26 Feb '13
(Date)

Attachment 1

Failure to Monitor, Keep Records or Report Form

Permit Condition No. & DESCRIPTION OF REQUIREMENT	**DESCRIPTION OF DEVIATION (including date)**	**REASON FOR DEVIATION & CORRECTIVE ACTION TAKEN**
III.A.5. Boilers 2, 3, 4 and/or 5 visible emissions <20% opacity.	Excess opacity from Boilers 2, 3, 4 and/or 5 as reported in attached summary of deviations (*Powerhouse Visible Emissions Summary*). Data in *Powerhouse Visible Emissions Summary* is based on the COMS, which was voluntarily installed and placed into operation during 2007.	Followed SOP as reported in attached summary of deviations.
VII.C [NC: Nitrocellulose Production] The permittee shall maintain records of all emission data and operating parameters to demonstrate compliance with this permit.	Continuously recorded data for the SCR process is missing for 31 December 2012 from approximately 0900 hours through the remainder of the day as a result of a computer failure. Although this data is maintained redundantly on both the local SCR control room computer as well as on the Active Factory server, data was lost for this time period from both systems.	An Active Factory server failure on 31 December 2012 led to the SCR emission and operating parameters data to not be recorded in this system. The data was recorded locally on the SCR control room computer; however, a database corruption error occurred on this computer on 7 January 2013 as the result of a software bug. At this time, operators were locked out of logging onto the Cirrus software on the SCR computer system. A software reinstallation was conducted by Honeywell, and in this process, the local data was overwritten. Hourly readings during the time of the computer data loss were recorded in hardcopy on Form DUP-8402 – *Selective Catalytic Reduction Unit Operating Data Sheet.* Additionally, the nitration process was shutdown during this time.
IX.A. In accordance with 40 CFR 63, Subpart EEE, Section 63.1203(a), the permittee shall not discharge or cause combustion gases to be emitted into the atmosphere that contain emissions in excess of ... • Carbon monoxide: 100 parts per million by volume, over an hourly rolling average (monitored continuously with a continuous emissions monitoring system), dry basis and corrected to 7 percent oxygen. (9 VAC 5-80-110 and 9 VAC 5-60-100)	RFAAP demonstrated intermittent compliance with the stack gas carbon monoxide (CO) emission limitation during the reporting period. Each instance in which the measured CO emissions exceeded the permitted limit is detailed on the attached deviations spreadsheet. Each of these instances was previously reported on the HWC MACT semiannual report for the incinerators submitted on 20 February 2013.	Specific reasons for each deviation and the associated corrective actions are detailed on the *Plant-wide Summary of Deviations* spreadsheet attached to this semiannual monitoring report.

Permit Condition No. & DESCRIPTION OF REQUIREMENT	DESCRIPTION OF DEVIATION (including date)	REASON FOR DEVIATION & CORRECTIVE ACTION TAKEN
IX.B.1. The permittee shall comply with the operating requirements and operating parameter limits specified in the September 29, 2003, or most current Documentation of Compliance prepared pursuant to 40 CFR 63, Subpart EEE, Section 63.1211; with the operating requirements and operating parameter limits specified in the Notification of Compliance prepared pursuant to 40 CFR 63, Subpart EEE, Section 63.1210; and with the monitoring requirements in accordance with 40 CFR 63, Subpart EEE, Section 63.1209. (9 VAC 5-80-110 and 9 VAC 5-60-100)	RFAAP demonstrated intermittent compliance with the operating parameter limits (OPLs) specified in the Notification of Compliance (NOC) and incorporated by reference into the Title V operating permit. Each instance in which the measured operating parameter exceeded the applicable OPL is detailed in the attached deviations spreadsheet. Each of these instances was previously reported on the HWC MACT semiannual report for the incinerators submitted on 20 February 2013 and included herein for completeness. RFAAP demonstrated intermittent compliance with the monitoring requirements specified by 40 CFR 63.1209 due to several instrument failures that occurred during the reporting period. Each instance in which RFAAP failed to monitor a required parameter is detailed in the attached deviations spreadsheet. Each of these instances was previously reported on the HWC MACT semiannual report for the incinerators submitted on 20 February 2013 and included herein for completeness.	Specific reasons for each deviation and the associated corrective actions are detailed on the attached deviations spreadsheet.
IX.B.2. The permittee shall take the following measures in order to minimize the duration and frequency of excess emissions, with respect to air pollution control equipment and process equipment which affect such emissions: a. Develop a maintenance schedule and maintain records of all schedule and non-scheduled maintenance. Records of maintenance, inspections, and training shall be maintained on site for a period of five (5)	During the reporting period, RFAAP demonstrated intermittent compliance with the requirement to maintain the incinerators following a planned maintenance schedule. Each instance in which a maintenance activity was not performed as planned is detailed in the attached deviations spreadsheet.	Specific reasons for each deviation and the associated corrective actions are detailed on the attached deviations spreadsheet.

Permit Condition No. & DESCRIPTION OF REQUIREMENT	DESCRIPTION OF DEVIATION (including date)	REASON FOR DEVIATION & CORRECTIVE ACTION TAKEN
years and all be made available to DEQ personnel upon request. (9 VAC 5-80-110 and 9 VAC 5-40-20E).		
X.A.1 RFAAP shall comply with all applicable current and future MACT, NESHAPS, NSPS and state regulations for fossil fuel fired, internal combustion engines, miscellaneous organic chemical manufacturing, commercial and industrial solid waste incinerators, organic liquid distribution, military MACTs and any other applicable regulations once promulgated.	Two 12-inch diesel pumps associated with the acid sewer bypass have been in operation since April 2011. These units cannot be defined as portable or emergency but rather should be classified as "non-emergency engines." Due to the potential to emit from the continuous operation of these units they do not qualify for exemptions from permitting under 9 VAC 5-80-710, 9 VAC 5-80-720, or 9 VAC 5-80-1105.	The pumps were initially installed as temporary pumps, but the unanticipated duration of use has changed their classification. BAE Systems is evaluating the applicable requirements and will submit permit applications as necessary to achieve compliance. A project to permanently install a new HDPE sewer line is currently underway.
X.A.6 Sulfur dioxide emissions from any noncombustion process operation, except as specified in sections titled "Fuel Burning Equipment Requirements" and "Process Equipment Requirements" in this permit, shall not exceed an in-stack concentration of 2000 ppm by volume. (9VAC 5-40-280 and 9VAC 5-80-110)	The SOx fume scrubber at the Sulfuric Tank Farm (Building #722) was not operable during semiannual period. The original failure date of the equipment is indeterminate. The SOx scrubber was not reconnected to a water supply until June 2012; however, due to degraded infrastructure, the water supply was not able to supply sufficient pressure to allow the scrubber system to run.	As of February 2013, a work order is currently in place to install a new permanent water supply system to the scrubber. As a temporary work-around, water is being supplied through a hose hook-up, and the scrubber system has resumed normal operation. The scrubber is being inspected and its operation documented via written record once-per-shift.
Condition 23.b of the NAC/SAC Stationary Source Permit (dated 6 April 2012): The permittee shall take the following measures in order to minimize the duration and frequency of excess emissions, with respect to the NAC/SAC (NSE04 & 05), oxidizer and absorption tower:… b. Conduct visual inspections of the absorption tower once per shift.	Written documentation of once-per-shift was not maintained for the semiannual monitoring period of 1 July through 31 December 2012. Although these visual inspections have been performed at the required frequency, no forms were filled out documenting these checks or their findings. Written records of these observations were begun in May 2012, and then inadvertently discontinued in July 2012.	The area operators were aware that once-per-shift inspections of the absorption tower were required, and conducted these inspections as part of their SOP, although they did not document these observations. The recordkeeping requirement of this condition has been reemphasized to the operators, and their observations are recorded on form *DUP-9336 – 0750 NAC/SAC Absorption Column Visual Checks.*
Condition 23 of the Explosive Production Line B Stationary Source Permit (dated 22 February 2005):	A review of steam meter records indicates that the TNT area steam meter failed and did not record any data subsequent to April 2012. The TNT spent-acid	At the present time, all tanks, vessels, buildings and wastewater basins at the Line B energetics production area have been cleaned, and no additional production

Permit Condition No. & DESCRIPTION OF REQUIREMENT	DESCRIPTION OF DEVIATION (including date)	REASON FOR DEVIATION & CORRECTIVE ACTION TAKEN
The permitee shall monitor steam flow/usage into the explosives production area (lines A, B, C including accessory buildings and processes)…. Each monitoring device shall be provided with adequate access for inspection and shall be in operation at all times.	recovery (SAR) plant steam meter has not been operational since January 2010.	activity will occur in the area unless a formal restart of the process is undertaken. At this time, there is no intention to resume operations of this area, and submission of a future request for formal shutdown is planned.

Attachment 2

"Other" Deviations

► ***Att. 2.a: Plant-wide Summary of Deviations Spreadsheet***

► ***Att. 2.b: Powerhouse Visible Emissions Summary***

Attachment 2.a

Plant-wide Summary of Deviations Spreadsheet

Date	Start Time	Area	Equipment	Description of Deviation and Root Cause	Duration	Magnitude of Emissions or Opacity, If Known	Immediate Response and Corrective Action
07/03/2012	13:46	WPI	Incinerator 441	Whie feeding hazardous waste to the incinerator, the kiln pressure suddenly spiked above atmospheric pressure.	< 1 minute	Not known	The waste feed automatically shut off. The operator raised the setpoint on the draft fan to maintain a more negative pressure in the kiln before resuming waste feed.
07/03/2012	19:15	WPI	Incinerator 440	A power failure occurred in the incinerator area, causing a malfunction that led to an exceedance of the kiln and afterburner minimum temperature limits and exceedance of the stack gas CO limit. In addition, the upset caused the baghouse to bypass.	18 minutes [1]	CO HRA reached 912ppm with waste in the system [2]	Waste feed was automatically suspended by the waste feed cut off system. The operator controlled the shutdown following proper procedures. Waste feed was not resumed until power was restored and the unit was stabilized.
07/03/2012	19:15	WPI	Incinerator 441	A power failure occurred in the incinerator area, causing a malfunction that led to an exceedance of the kiln and afterburner minimum temperature limits and exceedance of the stack gas CO limit. In addition, the upset caused the baghouse to bypass.	20 minutes [1]	CO HRA reached 511ppm with waste in the system	Waste feed was automatically suspended by the waste feed cut off system. The operator controlled the shutdown following proper procedures. Waste feed was not resumed until power was restored and the unit was stabilized.
07/04/2012	23:47	WPI	Incinerator 441	The thermocouple at the inlet to the baghouse failed, causing initially erroneous readings and eventually a loss of readings. The erroneous values. The readings were initially biased low. This resulted in high temperature gas entering the baghouse and caused damage to some of the bags and a sudden decrease in the pressure drop across the baghouse. The sudden change in system pressure caused an upset that eventually resulted in an exceedance of the stack gas CO limit. High readings were also reported by the baghouse leak detector.	20 minutes [1]	CO HRA reached 308ppm with waste in the system	The system was shutdown and the damaged bags were replaced before waste feed was reintroduced to the unit. A second thermocouple was installed upstream of the baghouse to provide redundant temperature measurement. Both the primary and the secondary thermocouples are tied into the baghouse bypass condition and register alarms if abnormally low or abnormally high temperatures are measured. The total duration is counted as the period of time that the erroneous readings are evident in the operating log and waste is in the system. The actual CO exceedance and baghouse leak detector alarm was only a fraction of this time (7 minutes and 14 minutes, respectively).
07/13/2012	08:25	WPI	Incinerator 440	Shut off of the waste feed caused unstable combustion operations. These unstable operations led to an exceedance of the stack gas CO limit.	14 minutes	CO HRA reached 203ppm with waste in the system	The operator managed the upset as per standard procedures. Waste feed was not resumed until the upset was resolved.

Date	Start Time	Area	Equipment	Description of Deviation and Root Cause	Duration	Magnitude of Emissions or Opacity, If Known	Immediate Response and Corrective Action
07/14/2012	17:03	WPI	Incinerator 440	Shut off of the waste feed caused unstable combustion operations. These unstable operations led to an exceedance of the stack gas CO limit.	13 minutes	CO HRA reached 109ppm with waste in the system	The operator managed the upset as per standard procedures. Waste feed was not resumed until the upset was resolved.
07/15/2012	08:42	WPI	Incinerator 440	Shut off of the waste feed caused unstable combustion operations. These unstable operations led to an exceedance of the stack gas CO limit.	8 minutes	CO HRA reached 150ppm with waste in the system	The operator managed the upset as per standard procedures. Waste feed was not resumed until the upset was resolved. Upon subsequent investigation, it was determined that the combustion air valve had been improperly set following a turn around. The valve was reset to the proper air flow and operators were instructed to check this setting with future startups. The valve on 441 was checked to make sure it was set properly as well.
07/22/2012	17:14	NC	SCR	The SCR was down from 17:14 hrs on 07/22/2012 through 11:39 hrs on 07/30/2012. The nitration process was shutdown during this time.	186.5 hours	N/A - the process was shutdown as planned at the time of the event.	The SCR was shutdown for extended maintenance in the area. The nitration process was not operating; the Piccolo scrubber was operated to control any residual fumes from the tanks.
07/23/2012	20:45	WPI	Incinerator 440	Upon shut off of the waste feed, the waste remaining in the kiln flared up, causing a combustion upset. These unstable operations led to an exceedance of the stack gas CO limit.	15 minutes	CO HRA reached 162ppm with waste in the system	Reviewed shutdown sequence used by operator and confirmed that proper procedures were followed.
07/26/2012	20:46	WPI	Incinerator 440	Upon shut off of the waste feed, the waste remaining in the kiln flared up, causing a combustion upset. These unstable operations led to an exceedance of the stack gas CO limit.	14 minutes	CO HRA reached 161ppm with waste in the system	Reviewed shutdown sequence used by operator. Determined that the operator likely used too much flush water in response to the flare up. Reviewed proper procedures with operator.
07/28/2012	19:10	WPI	Incinerator 441	The stack flow meter failed and caused erroneous stack gas velocity readings. These readings, which appeared to be biased low, caused a waste feed cutoff and an exceedance of the minimum stack gas velocity limit.	1,244 minutes	Not known	The annubar was removed, serviced, reinstalled in the system, and recalibrated before being placed back into service. The total duration is counted as the period of time that the erroneous readings are evident in the operating log. The actual parameter limit exceedance was only a small fraction of this time (21 minutes). Date and time provided is that associated with the parameter limit exceedance.
07/31/2012	21:53	WPI	Incinerator 441	The solenoid valve on the slurry line flush failed while flushing the feed line after shutting off waste. The continued flushing of water into the incinerator caused a positive pressure excursion.	2 minutes	Not known	The valve was checked and the technician was unable to duplicate the problem. This malfunction was added to the SSM plan. A report was submited to DEQ as required to document the occurrence of a new malfunction with a suspected emissions exceedance.

Date	Start Time	Area	Equipment	Description of Deviation and Root Cause	Duration	Magnitude of Emissions or Opacity, If Known	Immediate Response and Corrective Action
08/01/2012	16:40	NC	SCR	The SCR was down from 16:40 hrs on 08/01/2012 through 14:41 hrs on 08/02/2012. The nitration process was shutdown during this time.	22 hours	N/A - the process was shutdown at the time of the event.	The SCR was shutdown for maintenance. The nitration process was not operating; the Piccolo scrubber was online to control any residual fumes from the tanks.
08/03/2012	08:42	WPI	Incinerator 440	Upon shut off of the waste feed, the waste remaining in the kiln flared up, causing a combustion upset. These unstable operations led to a positive pressure excursion, an exceedance of the stack gas CO limit and a bypass of the baghouse due to sudden temperature fluctuations.	20 minutes [1]	CO HRA reached 244ppm with waste in the system	Reviewed shutdown sequence used by operator. Determined that the operator did not properly step the waste feed down and likely used too much flush water in response to the flare up. Reviewed proper procedures with operator. The bypass was reported to DEQ as required.
08/08/2012	01:55	WPI	Incinerator 440	The pump liner in the slurry feed pump failed prematurely and caused an upset to the waste feed and a subsequent upset in the combustion operations. These unstable operations led to an exceedance of the stack gas CO limit.	14 minutes	CO HRA reached 111ppm with waste in the system	Reviewed operator actions and confirmed that proper procedures were followed. Instituted a program to monitor the failure rate of the pump liners and determine if earlier replacement is required.
08/08/2012	08:57	WPI	Incinerator 440	Shut off of the waste feed caused unstable combustion operations. These unstable operations led to an exceedance of the stack gas CO limit.	15 minutes	CO HRA reached 106ppm with waste in the system	Reviewed operator actions and confirmed that proper procedures were followed. Adjusted setting on the combustion air valve to provide more air during upset conditions.
08/15/2012	12:21	WPI	Incinerator 441	The pump liner in the slurry feed pump failed prematurely and caused an upset to the waste feed and a subsequent upset in the combustion operations. These unstable operations led to a temperature swing that caused a baghouse bypass.	1 minute	Not known	Reviewed operator actions and confirmed that proper procedures were followed. Instituted a program to monitor the failure rate of the pump liners and determine if earlier replacement is required.
08/22/2012	07:15	WPI	Incinerator 440	While burning waste, the kiln temperature began to rise quickly. The operator successfully controlled the temperature using flush water. The CO spiked high as a result of the temperature excursion and subsequent control measures.	12 minutes	CO HRA reached 480ppm with waste in the system	Reviewed operator actions and confirmed that proper procedures were followed. Subsequent investigation found that the slurry being incinerated was prone to clumping at the end of the feed nozzle and burning in one large clump with an increased heat release instead of the more controlled release seen with loose material.

Date	Start Time	Area	Equipment	Description of Deviation and Root Cause	Duration	Magnitude of Emissions or Opacity, If Known	Immediate Response and Corrective Action
08/23/2012	12:09	WPI	Incinerator 441	With waste feed off, instrument technicians had checked the peeper on the main burner. When the peeper was pulled it caused an increase in the evaporative cooler temperature. However, the temperature was still within all permitted operating parameter limits and unit safety limits. Upon conclusion of the instrument checks, waste feed was resumed. High baghouse inlet temperatures recorded during the instrument checks led to an exceedance of the baghouse inlet temperature limit shortly after feed resumed.	4 minutes	Not known	Adjusted instrument PM procedure to make sure that the peeper checks are done at the start of the calibration. Additionally, reviewed that operators should make sure that the instantaneous evaporative cooler temperature is less than the 60 MRA limit before resuming waste feed.
09/03/2012	21:36	WPI	Incinerator 440	While burning waste, the kiln temperature began to rise quickly. The rise was so great that the operator had to use the pump flush line to control the temperature. This flush is an emergency, non-regulated flow, causing a full ine pressure of water to be added to the kiln rapidly. The CO spiked high as a result of the temperature excursion and subsequent control measures.	14 minutes	CO HRA reached 170ppm with waste in the system	Reviewed shutdown sequence used by operator. Determined that the operator used the pump flush line prematurely. Reviewed proper flushing procedures with the operator.
09/09/2012	05:42	WPI	Incinerator 441	The stack oxygen monitor failed while burning waste. The failure prevented accurate measurement of the stack oxygen concentration and correction of the stack carbon monoxide concentration.	20 minutes	Not known	The waste feed was automatically cut off when the failure was registered. The monitor was removed, serviced, and reinstalled in the Incinerator 440 system. A RATA was performed before it was placed back in service. The monitor from the Incinerator 440 system was installed on Incinerator 441 and an ACA was performed before it was placed in service.
09/15/2012	N/A	WPI	Incinerator 441	The quarterly PM scheduled for Incinerator 441 and described in the Incinerators' Operation & Maintenance Plan was not performed as scheduled in September 2012.	N/A	None	The incinerator was scheduled to come down at the end of September. Therefore, the quarterly PM was extended to be performed while the incinerator was down in the following quarter.

Date	Start Time	Area	Equipment	Description of Deviation and Root Cause	Duration	Magnitude of Emissions or Opacity, If Known	Immediate Response and Corrective Action
09/27/2012	08:13	WPI	Incinerator 441	Shut off of the waste feed caused unstable combustion operations. These unstable operations led to an exceedance of the stack gas CO limit.	14 minutes	CO HRA reached 175ppm with waste in the system	Reviewed shutdown sequence used by operator. Determined that the operator did not properly step the waste feed down. Reviewed proper procedures with operator.
10/01/2012	00:46	WPI	Incinerator 441	Shut off of the waste feed caused unstable combustion operations. These unstable operations led to an exceedance of the stack gas CO limit.	12 minutes	CO HRA reached 125ppm with waste in the system	Reviewed shutdown sequence used by operator. Determined that the operator did not properly step the waste feed down. Reviewed proper procedures with operator.
10/12/2012	N/A	WPI	Incinerator 441	The monthly waste feed cutoff check scheduled for Incinerator 441 and described in the Incinerators' CMS PE Plan was not performed as scheduled in October 2012.	N/A	None	When the PM came scheduled, the unit was down. However, the unit had operated during the month of October. Therefore, the monthly check should have still been performed. Weekly AWFCO checks were perfomed in October while the unit was operating. Therefore, the only two AWFCO's not checked in the month of October were those associated with the baghouse leak detector and the baghouse bypass valve.
10/16/2012	10:55	WPI	Incinerator 440	While burning waste, the flame to one of the afterburner burners suddenly went out.	20 minutes	Not known	Waste feed was automatically shut off upon the flame failure. Upon subsequent investigation, it was discovered that the flame detector one of the burners had failed. The peeper was replaced before waste feed resumed.
10/18/2012	04:56	WPI	Incinerator 440	While burning waste, the flame to one of the afterburner burners suddenly went out.	20 minutes	Not known	Waste feed was automatically shut off upon the flame failure. Upon subsequent investigation, it was discovered that the gas and air valves were never rebalanced after the peeper was replaced.
11/01/2012	08:25	WPI	Incinerator 440	While shutting off the waste feed, the flame on one of the afterburner burners suddenly went out.	20 minutes	Not known	The system was stablized and the burner relit before waste feed resumed.
11/01/2012	20:42	WPI	Incinerator 440	While shutting off the waste feed, the flame on one of the afterburner burners suddenly went out.	20 minutes	Not known	The system was stablized and the burner relit before waste feed resumed.
11/06/2012	07:38	WPI	Incinerator 440	While shutting off the waste feed, the flame on one of the afterburner burners suddenly went out.	20 minutes	Not known	The system was stablized and the burner relit before waste feed resumed. After further investigation, it was determined that the combustion air valve was not responding properly to control system demands. The combustion air valve was replaced.

Date	Start Time	Area	Equipment	Description of Deviation and Root Cause	Duration	Magnitude of Emissions or Opacity, If Known	Immediate Response and Corrective Action
11/12/2012	N/A	WPI	Incinerator 441	The monthly waste feed cutoff check scheduled for Incinerator 441 and described in the Incinerators' CMS PE Plan was not performed as scheduled in November 2012.	N/A	None	When the PM came scheduled, the unit was down. However, the unit did come back up and feed waste for a very short period of time (~4 hours) later in the month to facilitate inspection of the new feed camera. Therefore, the monthly check should have still been performed. Weekly AWFCO checks were perfomed in November while the unit was operating. Therefore, the only two AWFCO's not checked in the month of November were those associated with the baghouse leak detector and the baghouse bypass valve.
11/16/2012	08:10	NC	SCR	The SCR was down from 08:10 through 13:23 hrs on 11/16/2012. The nitration process was shutdown during this time.	5.2 hours	N/A - the process was shutdown as planned at the time of the event.	The SCR was shutdown for scheduled maintenance (scheduled switch of SCR fume fans). Both fans are exercised on a regular basis to ensure they are maintained in good operating condition. The nitration process was not operating; the Piccolo scrubber was operated to control any residual fumes from the tanks.
11/29/2012	06:03	WPI	Incinerator 440	A power failure occurred in the incinerator area, causing a malfunction that led to a positive pressure excursion, an exceedance of the kiln and afterburner minimum temperature limits, and an exceedance of the stack gas CO limit. In addition, the upset caused the baghouse to bypass.	20 minutes [1]	CO HRA reached 2313ppm with waste in the system	Waste feed was automatically suspended by the waste feed cut off system. The operator controlled the shutdown following proper procedures. Waste feed was not resumed until power was restored and the unit was stabilized.
12/19/2012	09:16	NC	SCR	The SCR was down from 09:16 through 12:31 hrs on 12/19/2012. The nitration process was shutdown during this time.	3.3 hours	N/A - the process was shutdown as planned at the time of the event.	The SCR was shutdown to switch fume fans due to a crack in the housing of the primary fan. However, the second fan had shorted out and could not be started. A repair was initiated and the primary fan brought back online. The nitration process was not operating at the time the SCR was offline; the Piccolo scrubber was operated to control any residual fumes from the tanks.
12/26/2012	11:08	NC	SCR	The SCR was down from 11:08 hrs on 12/26/2012 through 10:37 hrs on 12/27/2012. The SCR fired heater furnace kept kicking out. Upon discovery of the problem, the nitration process was immediately shutdown.	23.5 hours	N/A - the process was shutdown immediately upon discovery of the issue and no excess emissions were observed.	The SCR was shutdown due to a malfunction with the fired heater; the furnace kept kicking out. An electrician was called out to assist with the repair and relight the furnace. The nitration process was shutdown immediately at the time the SCR went offline due to malfunction; the Piccolo scrubber was operated to control any residual fumes from the tanks.

Attachment 2.b

Powerhouse Visible Emissions Summary

Date	Start Time	Duration	Boiler Unit					Maximum 6-min Block Avg. (% Opacity)	Description of Deviation and Root Cause	Immediate Response and Corrective Action
			#1	#2	#3	#4	#5			
07/01/2012	02:12	12 min		X				29.4	Soot blowing.	Followed standard operating procedures.
07/06/2012	07:18	12 min		X	X			27.7	Soot blowing.	Followed standard operating procedures.
07/07/2012	14:06	12 min		X				29.1	Soot blowing.	Followed standard operating procedures.
07/10/2012	15:42	12 min		X	X			33.2	Soot blowing.	Followed standard operating procedures.
07/22/2012	06:12	12 min			X		X	29.0	Soot blowing.	Followed standard operating procedures.
07/22/2012	20:42	12 min			X			43.7	Soot blowing.	Followed standard operating procedures.
07/23/2012	05:36	30 min			X		X	59.5	Soot blowing.	Followed standard operating procedures.
07/29/2012	03:12	through 23:59			X			**94.3 (COMS malfunction)**	***Malfunction 14-day letter submitted to VDEQ on 14 August 2012.*** Copies of previously submitted documents are appended to this report.	
07/30/2012	00:00	through 23:59		X	X			45.1 (COMS malfunction)		
07/31/2012	00:00	through approximately 23:00			X			43.4 (COMS malfunction)		
08/01/2012	02:12	12 min			X			42.3	Soot blowing.	Followed standard operating procedures.
08/01/2012	09:24	24 min			X			**71.0**	Failure of the 3A feeder and vibrator. Had to use both oil guns on Boiler #3 to support steam pressure while this malfunction was resolved and coal feed could be restored.	Followed standard operating procedures. *Event was not reported previously as the permit states that immediate notification is required only if excess emissions exceed an hour duration (Conditions XIII.E and XIII.F).*
08/01/2012	17:18	18 min			X			20.4	Indeterminate cause.	Ongoing COMS malfunction at the time of this event causing erroneously high readings.
08/01/2012	18:00	18 min			X			20.9	Indeterminate cause.	Ongoing COMS malfunction at the time of this event causing erroneously high readings.
08/01/2012	22:00	12 min			X			39.4	Soot blowing.	Followed standard operating procedures.
08/02/2012	06:06	12 min			X			40.5	Soot blowing.	Followed standard operating procedures.
08/02/2012	10:24	2 hr 0 min			X			43.8	***Malfunction 14-day letter submitted to VDEQ on 14 August 2012.*** Copies of previously submitted documents are appended to this report.	
08/02/2012	22:00	12 min			X			40.3	Soot blowing.	Followed standard operating procedures.
08/03/2012	06:00	12 min			X			40.4	Soot blowing.	Followed standard operating procedures.
08/03/2012	13:42	12 min			X			37.9	Cleaned boilers and soot blowing.	Followed standard operating procedures.
08/03/2012	22:00	18 min			X			32.5	Soot blowing.	Followed standard operating procedures.
08/04/2012	06:00	12 min			X			42.1	Soot blowing.	Followed standard operating procedures.
08/04/2012	14:00	24 min			X			37.3	Soot blowing.	Followed standard operating procedures.

Date	Start Time	Duration	Boiler Unit					Maximum 6-min Block Avg. (% Opacity)	Description of Deviation and Root Cause	Immediate Response and Corrective Action
			#1	#2	#3	#4	#5			
08/04/2012	16:00	12 min			X			20.4	***Malfunction 14-day letter submitted to VDEQ on 14 August 2012..*** Copies of previously submitted documents are appended to this report.	
08/04/2012	18:00	18 min			X			20.9		
08/04/2012	20:24	12 min			X			21.6		
08/04/2012	21:00	18 min			X			21.4		
08/04/2012	22:00	48 min			X			37.2	Soot blowing.	Followed standard operating procedures.
08/04/2012	23:00	12 min			X			22.1	***Malfunction 14-day letter submitted to VDEQ on 14 August 2012.*** Copies of previously submitted documents are appended to this report.	
08/05/2012	00:00	intermittant through 23:59			X			**66.2 (COMS malfunction)**		
08/06/2012	00:00	resolved approximately 15:30			X			**53.5 (COMS malfunction)**		
08/06/2012	18:12	12 min			X			22.4	Indeterminate cause.	Ongoing COMS malfunction at the time of this event causing erroneously high readings.
08/06/2012	22:00	18 min			X			40.2	Soot blowing.	Followed standard operating procedures.
08/07/2012	04:06	12 min			X			22.9	Indeterminate cause.	Ongoing COMS malfunction at the time of this event causing erroneously high readings.
08/07/2012	05:06	12 min			X			24.3	Indeterminate cause.	Ongoing COMS malfunction at the time of this event causing erroneously high readings.
08/07/2012	06:00	18 min			X			51.2	Soot blowing.	Followed standard operating procedures.
08/07/2012	07:18	12 min			X			21.1	Indeterminate cause.	Ongoing COMS malfunction at the time of this event causing erroneously high readings.
08/07/2012	09:12	18 min			X			22.6	Indeterminate cause.	Ongoing COMS malfunction at the time of this event causing erroneously high readings.
08/07/2012	14:00	12 min			X			33.9	Soot blowing.	Followed standard operating procedures.

Date	Start Time	Duration	Boiler Unit					Maximum 6-min Block Avg. (% Opacity)	Description of Deviation and Root Cause	Immediate Response and Corrective Action
			#1	#2	#3	#4	#5			
08/08/2012	11:30	12 min		X				**81.3**	Abnormal operating conditions during process of warming and energizing steam tie line following repairs to steam reducing station (Building 9499). Valves at tie line were being opened incrementally to allow managed heating and to control expansion. However, when the steam valve was opened the last ~20%, the demand dropped main pressure in powerhouse to the point that fuel oil was required to maintain steam pressure.	Followed standard operating procedures. *Event was not reported previously as the permit states that immediate notification is required only if excess emissions exceed an hour duration (Conditions XIII.E and XIII.F).*
08/11/2012	18:36	12 min			X			**72.4**	Indeterminate cause; boiler was being operated in manual mode at the time.	Followed standard operating procedures. *Event was not reported previously as the permit states that immediate notification is required only if excess emissions exceed an hour duration (Conditions XIII.E and XIII.F).*
08/11/2012	22:00	12 min			X			34.9	Soot blowing.	Followed standard operating procedures.
08/12/2012	06:00	12 min			X			39.4	Soot blowing.	Followed standard operating procedures.
08/12/2012	14:18	12 min			X			53.5	Soot blowing.	Followed standard operating procedures.
08/17/2012	12:06	12 min		X	X			47.4	Failure of 2B mill while trying to bring it online could not get sufficient furnace draft.	Followed standard operating procedures. Brought 3B mill online.
08/17/2012	20:24	12 min		X	X			37.2	Soot blowing.	Followed standard operating procedures.
08/18/2012	22:06	12 min		X	X			26.5	Soot blowing.	Followed standard operating procedures.
08/19/2012	05:36	12 min		X	X			53.6	Soot blowing.	Followed standard operating procedures.
08/19/2012	07:30	12 min		X	X			**75.0**	Due to an instantaneous steam pressure drop, oil guns had to be used on Boilers #2 and #3.	Followed standard operating procedures. *Event was not reported previously due to the permit interpretation that immediate notification is required only if excess emissions exceed an hour duration (Conditions XIII.E and XIII.F).*
08/21/2012	09:42	12 min		X	X			23.2	Cleaned boilers.	Followed standard operating procedures.
08/21/2012	14:06	18 min		X	X			56.1	Soot blowing.	Followed standard operating procedures.
08/22/2012	13:30	48 min		X				**85.7**	Due to a steam leak in header, oil gun had to be used on Boiler #2 to support steam pressure.	Followed standard operating procedures. *Event was not reported previously as the permit states that immediate notification is required only if excess emissions exceed an hour duration (Conditions XIII.E and XIII.F).*
08/24/2012	13:12	36 min			X	X		31.5	Elevated opacity as a result of postponed soot blowing for extended period due to maintenance work on #2 precipitator.	Followed standard operating procedures.

Date	Start Time	Duration	Boiler Unit					Maximum 6-min Block Avg. (% Opacity)	Description of Deviation and Root Cause	Immediate Response and Corrective Action
			#1	#2	#3	#4	#5			
08/24/2012	19:18	12 min			X	X		44.1	Indeterminate cause.	
08/28/2012	16:42	12 min			X			28.0	The 3A feeder tripped off, resulting in no coal on the belt and unexpected loss of fire on Boiler #3.	Followed standard operating procedures. Had to use oil guns to support steam pressure until Boiler #3 was restarted.
08/30/2012	05:42	12 min			X			40.0	Large instantaneous load swing (355 to 430 psi); had to use oil guns to prevent boiler from tripping offline.	Used oil guns to support steam pressure on Boiler #3.
08/30/2012	06:18	18 min		X				**68.9**	Malfunction of 2B mill while being brought online.	Followed standard operating procedures. *Event was not reported previously as the permit states that immediate notification is required only if excess emissions exceed an hour duration (Conditions XIII.E and XIII.F).*
08/30/2012	10:24	36 min				X		**67.9**	Maintenance activities on precipitators.	Followed standard operating procedures. *Event was not reported previously due to the permit interpretation that immediate notification is required only if excess emissions exceed an hour duration (Conditions XIII.E and XIII.F).*
09/06/2012	13:12	12 min		X	X			37.9	Soot blowing.	Followed standard operating procedures.
09/06/2012	22:06	12 min		X	X			30.8	Soot blowing.	Followed standard operating procedures.
09/07/2012	23:06	12 min			X	X		26.6	Start-up of mill 4B; shutdown of 3B.	Followed standard operating procedures.
09/11/2012	01:36	12 min		X				44.9	Start-up of 2B mill.	Followed standard operating procedures.
09/11/2012	14:06	12 min		X		X		39.5	Soot blowing.	Followed standard operating procedures.
09/12/2012	19:48	12 min		X	X			55.8	Large instantaneous load swing; had to use oil guns to prevent boilers from tripping offline.	Used oil guns to support steam pressure on Boilers #2 and 3.
09/13/2012	20:18	12 min			X	X		39.0	Soot blowing.	Followed standard operating procedures.
09/17/2012	06:06	18 min				X		37.4	Soot blowing.	Followed standard operating procedures.
09/18/2012	06:06	36 min			X	X		43.4	Soot blowing.	Followed standard operating procedures.
09/18/2012	14:06	24 min			X	X		35.4	Soot blowing.	Followed standard operating procedures.
09/18/2012	15:24	12 min			X	X		22.0	Indeterminate cause.	
09/19/2012	09:42	12 min			X	X		21.9	Cleaned boilers and soot blowing.	Followed standard operating procedures.
09/19/2012	13:06	18 min			X	X		43.6	Soot blowing.	Followed standard operating procedures.
09/24/2012	15:00	18 min			X			25.0	Start-up of 3B mill.	Followed standard operating procedures.
09/24/2012	20:00	48 min			X	X		55.6	Soot blowing.	Followed standard operating procedures.
09/26/2012	09:00	18 min			X	X	X	26.0	Cleaned boilers #3 and #4; maintenance was cleaning out precipitators for #5.	Followed standard operating procedures.
09/26/2012	20:24	36 min			X	X		34.9	Soot blowing.	Followed standard operating procedures.

Date	Start Time	Duration	Boiler Unit					Maximum 6-min Block Avg. (% Opacity)	Description of Deviation and Root Cause	Immediate Response and Corrective Action
			#1	#2	#3	#4	#5			
09/28/2012	11:42	18 min			X	X		**70.7**	Due to sudden load demand increase, had to use oil guns on Boilers #3 and 4, and brought 3B mill online to support steam pressure.	Followed standard operating procedures. *Event was not reported previously as the permit states that immediate notification is required only if excess emissions exceed an hour duration (Conditions XIII.E and XIII.F).*
09/29/2012	14:06	12 min			X	X		34.0	Soot blowing.	Followed standard operating procedures.
09/30/2012	08:06	12 min		X	X			**62.9**	Malfunction of water regulator on Boiler #3.	Followed standard operating procedures. *Event was not reported previously as the permit states that immediate notification is required only if excess emissions exceed an hour duration (Conditions XIII.E and XIII.F).*
09/30/2012	11:00	12 min		X	X			27.5	Feeder failure on Boiler #2 when attempting to start up to take Boiler #3 offline for maintenance (due to water regulator malfunction).	Followed standard operating procedures.
10/02/2012	01:30	18 min			X			39.1	Soot blowing.	Followed standard operating procedures.
10/02/2012	05:00	12 min		X		X		20.5	Soot blowing.	Followed standard operating procedures.
10/02/2012	08:00	12 min		X		X		26.9	Indeterminate cause.	
10/03/2012	10:00	12 min		X		X		20.7	Cleaned boilers.	Followed standard operating procedures.
10/03/2012	13:18	12 min		X		X		21.9	Indeterminate cause.	
10/03/2012	14:00	24 min				X		34.0	Soot blowing.	Followed standard operating procedures.
10/03/2012	15:12	18 min		X				27.8	Soot blowing.	Followed standard operating procedures.
10/04/2012	12:24	18 min		X		X		35.6	Cleaned boilers and soot blowing.	Followed standard operating procedures.
10/04/2012	22:06	18 min		X		X		40.7	Soot blowing.	Followed standard operating procedures.
10/05/2012	13:00	30 min		X				30.8	Soot blowing.	Followed standard operating procedures.
10/05/2012	14:00	18 min		X				21.9	Soot blowing.	Followed standard operating procedures.
10/05/2012	22:06	30 min		X		X		32.7	Soot blowing.	Followed standard operating procedures.
10/09/2012	01:36	12 min		X		X		25.0	Cleaned boilers.	Followed standard operating procedures.
10/10/2012	12:12	12 min		X				45.0	Indeterminate cause.	
10/10/2012	15:12	12 min		X				28.7	Indeterminate cause.	
10/11/2012	08:06	12 min					X	40.9	Maintenance activities on Boiler #5 B mill.	Followed standard operating procedures.
10/11/2012	20:06	18 min		X		X		37.4	Soot blowing.	Followed standard operating procedures.
10/12/2012	06:06	18 min		X		X		29.2	Soot blowing.	Followed standard operating procedures.
10/12/2012	20:24	12 min		X		X		34.5	Soot blowing.	Followed standard operating procedures.
10/13/2012	06:00	18 min		X		X		52.2	Soot blowing.	Followed standard operating procedures.
10/13/2012	22:00	12 min		X		X		59.3	Soot blowing.	Followed standard operating procedures.
10/14/2012	06:24	12 min		X		X		29.0	Soot blowing.	Followed standard operating procedures.
10/14/2012	22:00	18 min		X		X		45.2	Soot blowing.	Followed standard operating procedures.

Date	Start Time	Duration	Boiler Unit					Maximum 6-min Block Avg. (% Opacity)	Description of Deviation and Root Cause	Immediate Response and Corrective Action
			#1	#2	#3	#4	#5			
10/15/2012	06:06	12 min		X		X		39.5	Soot blowing.	Followed standard operating procedures.
10/15/2012	11:00	18 min		X				21.6	Cleaned boilers.	Followed standard operating procedures.
10/15/2012	13:18	18 min		X		X		40.8	Soot blowing.	Followed standard operating procedures.
10/15/2012	22:06	18 min		X		X		54.7	Soot blowing.	Followed standard operating procedures.
10/16/2012	06:06	18 min		X		X		43.6	Soot blowing.	Followed standard operating procedures.
10/16/2012	22:12	24 min		X		X		51.1	Soot blowing.	Followed standard operating procedures.
10/17/2012	06:06	18 min		X		X		42.2	Soot blowing.	Followed standard operating procedures.
10/17/2012	13:42	12 min		X		X		21.2	Soot blowing.	Followed standard operating procedures.
10/19/2012	08:30	12 min		X		X		24.4	Indeterminate cause.	
10/19/2012	12:12	12 min					X	26.3	Firing of Boiler #5 for restart.	Followed standard operating procedures.
10/19/2012	17:30	12 min		X			X	33.1	Feeder failure on 2A.	Followed standard operating procedures. Brought #5 online to meet demand.
10/19/2012	20:00	24 min					X	24.0	Mill failure on 5A.	Followed standard operating procedures.
10/20/2012	11:48	12 min		X			X	24.3	Shutdown of Boiler #5 due to feedwater regulator malfunction.	Followed standard operating procedures. Brought #2 online to meet demand.
10/20/2012	12:00	12 min		X			X	21.4		
10/21/2012	06:12	12 min		X		X		24.0	Soot blowing.	Followed standard operating procedures.
10/22/2012	20:30	24 min		X		X		34.7	Soot blowing.	Followed standard operating procedures.
10/23/2012	06:00	12 min		X		X		31.8	Soot blowing.	Followed standard operating procedures.
10/24/2012	02:06	12 min		X		X		27.4	Indeterminate cause.	
10/26/2012	02:01	19 min		X		X		**89.6**	***Prompt Deviation Form submitted to VDEQ on 6 November 2012.*** Copies of previously submitted documents are appended to this report.	
10/26/2012	17:24	12 min			X			39.7	Fire out on Boiler #3 due to water tube leak.	Followed standard operating procedures.
11/02/2012	12:48	12 min		X		X	X	30.7	Soot blowing.	Followed standard operating procedures.
11/03/2012	05:12	12 min		X		X	X	28.4	Soot blowing.	Followed standard operating procedures.
11/04/2012	14:06	12 min		X		X	X	25.9	Soot blowing.	Followed standard operating procedures.
11/06/2012	14:18	30 min		X		X	X	32.4	Soot blowing.	Followed standard operating procedures.
11/06/2012	15:48	12 min		X		X	X	31.4	Rebalanced load between boilers due to high demand.	Followed standard operating procedures.
11/08/2012	15:03	12 min				X		**64.3**	***Malfunction 14-day letter resubmitted to VDEQ on 28 November 2012.*** Copies of previously submitted documents are appended to this report.	
11/09/2012	00:32	1 hr 48 min		X				40.5	***Malfunction 14-day letter resubmitted to VDEQ on 28 November 2012.*** Copies of previously submitted documents are appended to this report.	
11/10/2012	05:18	18 min		X			X	34.6	Rebalanced load between boilers due to high demand.	Followed standard operating procedures.
11/13/2012	00:01	24 min		X			X	**60.7**	***Prompt Deviation Form submitted to VDEQ on 20 November 2012.*** Copies of previously submitted documents are appended to this report.	

Date	Start Time	Duration	Boiler Unit					Maximum 6-min Block Avg. (% Opacity)	Description of Deviation and Root Cause	Immediate Response and Corrective Action
			#1	#2	#3	#4	#5			
11/13/2012	13:48	12 min		X			X	39.5	Cleaned boilers.	Followed standard operating procedures.
11/16/2012	02:18	30 min		X		X	X	47.4	Indeterminate cause.	
11/18/2012	05:18	12 min		X		X	X	21.9	Soot blowing.	Followed standard operating procedures.
11/20/2012	20:24	12 min		X	X	X		23.9	Soot blowing.	Followed standard operating procedures.
11/21/2012	22:06	12 min		X	X	X		28.6	Soot blowing.	Followed standard operating procedures.
11/22/2012	22:00	12 min		X	X	X		28.8	Soot blowing.	Followed standard operating procedures.
11/24/2012	22:12	12 min		X	X	X		25.9	Soot blowing.	Followed standard operating procedures.
11/25/2012	06:06	12 min		X	X	X		31.5	Soot blowing.	Followed standard operating procedures.
11/25/2012	13:06	12 min		X	X	X		35.0	Soot blowing.	Followed standard operating procedures.
11/25/2012	22:12	12 min		X	X	X		31.7	Soot blowing.	Followed standard operating procedures.
11/26/2012	14:18	24 min				X		**73.1**	***Malfunction 14-day letter submitted to VDEQ 7 December 2012.*** Copies of previously submitted documents are appended to this report.	
11/26/2012	21:36	24 min				X		28.3	Restart of Boiler #4 following tube leak repair.	Followed standard operating procedures.
11/27/2012	07:12	12 min		X	X		X	24.3	Indeterminate cause.	
11/27/2012	14:06	18 min		X	X		X	36.8	Soot blowing.	Followed standard operating procedures.
11/27/2012	15:18	12 min		X	X		X	20.6	Indeterminate cause.	
11/28/2012	14:06	18 min		X	X		X	27.9	Soot blowing.	Followed standard operating procedures.
11/28/2012	17:30	12 min			X			56.3	Sudden spike in steam demand.	Followed standard operating procedures. Oil gun on Boiler #3 to maintain steam pressure.
11/29/2012	13:36	24 min		X	X		X	37.6	Soot blowing.	Followed standard operating procedures.
11/29/2012	21:42	12 min		X	X		X	23.1	Soot blowing.	Followed standard operating procedures.
11/29/2012	22:24	18 min		X	X		X	36.6	Soot blowing.	Followed standard operating procedures.
11/30/2012	02:30	12 min		X				29.4	Sudden spike in steam demand.	Followed standard operating procedures. Oil gun on Boiler #2 to maintain steam pressure.
11/30/2012	06:00	24 min		X	X		X	34.3	Soot blowing.	Followed standard operating procedures.
11/30/2012	12:36	24 min		X	X		X	37.2	Soot blowing.	Followed standard operating procedures.
11/30/2012	13:00	12 min		X	X		X	20.3	Soot blowing.	Followed standard operating procedures.
11/30/2012	22:12	18 min		X	X		X	49.4	Soot blowing.	Followed standard operating procedures.
12/01/2012	06:18	24 min		X	X		X	53.6	Soot blowing.	Followed standard operating procedures.
12/01/2012	15:48	24 min		X	X		X	33.6	Soot blowing.	Followed standard operating procedures.
12/02/2012	22:00	12 min		X	X		X	22.0	Soot blowing.	Followed standard operating procedures.
12/04/2012	14:12	12 min		X	X		X	27.4	Soot blowing.	Followed standard operating procedures.
12/05/2012	16:06	24 min			X			**76.1**	***Malfunction 14-day letter submitted to VDEQ on 19 December 2012.*** Copies of previously submitted documents are appended to this report.	
12/07/2012	02:42	54 min			X			**47.0**	***Malfunction 14-day letter submitted to VDEQ on 19 December 2012.*** Copies of previously submitted documents are appended to this report.	
12/10/2012	12:30	18 min		X		X	X	37.6	Soot blowing.	Followed standard operating procedures.

Date	Start Time	Duration	Boiler Unit					Maximum 6-min Block Avg. (% Opacity)	Description of Deviation and Root Cause	Immediate Response and Corrective Action
			#1	#2	#3	#4	#5			
12/11/2012	05:18	12 min					X	24.3	Start-up on 5B mill.	Followed standard operating procedures.
12/11/2012	14:00	18 min		X		X	X	36.3	Soot blowing.	Followed standard operating procedures.
12/11/2012	22:18	24 min		X		X	X	45.5	Soot blowing.	Followed standard operating procedures.
12/12/2012	06:12	18 min		X		X	X	42.4	Soot blowing.	Followed standard operating procedures.
12/12/2012	14:36	24 min		X		X	X	39.8	Soot blowing.	Followed standard operating procedures.
12/13/2012	01:00	24 min		X		X	X	24.2	Soot blowing.	Followed standard operating procedures.
12/13/2012	15:12	12 min				X		22.9	Soot blowing.	Followed standard operating procedures.
12/13/2012	16:30	12 min		X				34.3	Soot blowing.	Followed standard operating procedures.
12/13/2012	23:42	12 min				X		20.9	Soot blowing.	Followed standard operating procedures.
12/14/2012	04:42	12 min		X				22.4	Soot blowing.	Followed standard operating procedures.
12/14/2012	08:36	18 min			X			25.5	Restart of Boiler #3.	Followed standard operating procedures.
12/14/2012	12:06	30 min					X	27.2	Boiler #5 tripped offline due to load demand increase.	Followed standard operating procedures.
12/15/2012	18:24	12 min		X	X			20.5	Soot blowing.	Followed standard operating procedures.
12/15/2012	20:12	18 min		X	X	X		40.3	Soot blowing.	Followed standard operating procedures.
12/16/2012	06:00	24 min		X	X	X		45.4	Soot blowing.	Followed standard operating procedures.
12/17/2012	06:12	18 min		X	X	X		25.1	Soot blowing.	Followed standard operating procedures.
12/19/2012	06:06	12 min		X	X	X		33.4	Soot blowing.	Followed standard operating procedures.
12/20/2012	15:18	4 hours (non-consecutive)			X			**86.0**	***Malfunction 14-day letter submitted to VDEQ on 4 January 2013.*** Copies of previously submitted documents are appended to this report.	
12/21/2012	14:06	30 min		X		X	X	42.6	Soot blowing.	Followed standard operating procedures.
12/22/2012	12:00	18 min		X		X	X	36.4	Soot blowing.	Followed standard operating procedures.
12/23/2012	22:12	18 min		X		X	X	38.5	Soot blowing.	Followed standard operating procedures.
12/24/2012	06:06	18 min		X		X	X	27.8	Soot blowing.	Followed standard operating procedures.
12/25/2012	06:24	12 min		X		X	X	28.3	Soot blowing.	Followed standard operating procedures.
12/26/2012	06:06	12 min		X		X	X	23.9	Soot blowing.	Followed standard operating procedures.
12/27/2012	06:06	12 min		X		X	X	28.1	Soot blowing.	Followed standard operating procedures.
12/29/2012	14:12	18 min			X			**65.6**	***Malfunction 14-day letter submitted to VDEQ on 4 January 2013.*** Copies of previously submitted documents are appended to this report.	
12/29/2012	22:24	12 min		X		X	X	30.3	Soot blowing.	Followed standard operating procedures.
12/30/2012	13:12	18 min		X		X	X	36.8	Soot blowing.	Followed standard operating procedures.
12/31/2012	14:06	24 min		X		X	X	36.0	Soot blowing.	Followed standard operating procedures.
12/31/2012	17:42	12 min		X				39.2	Feeder failure on 2A.	Followed standard operating procedures.

Attachment 3

Copies of Previously Submitted Reports

► **Att. 3.a: CEM Excess Emissions Quarterly Reports**
- ○ 3Q2012 CMS Report for the Nitrocellulose Process NOx Abatement System
- ○ 4Q2012 CMS Report for the Nitrocellulose Process NOx Abatement System
- ○ 3Q2012 CEMS Report for the Explosive Waste Incinerators (440/441)
- ○ 4Q2012 CEMS Report for the Explosive Waste Incinerators (440/441)

► **Att. 3.b: MACT Reports**
- ○ 2H2012 MACT Subpart EEE Report - RFAAP Explosive Waste Incinerators (submitted by BAE Systems OSI on 20 February 2012)

► **Att. 3.c: Prompt Deviation Reports**
- ○ 09-12-2012 Notification of Excess Emissions from the Acid Storage Area
- ○ 10-09-2012 Notification of Piccolo Scrubber Deviation at the Nitrocellulose Process
- ○ 10-26-2012 Notification of Powerhouse Excess Opacity Deviation
- ○ 11-13-2012 Notification of Powerhouse Excess Opacity Deviation

► **Att. 3.d: Malfunction Follow-Up Reports**
- ○ 07-02-2012 Fume-off and Excess NOx Emissions at the Nitrocellulose Process
- ○ 07-09-2012 Notification of SCR Malfunction at the Nitrocellulose Process
- ○ 07-29-2012 Notification of Powerhouse COMS Malfunction
- ○ 07-31-2012 Notification of 441 Hazardous Waste Combustor Malfunction
- ○ 08-03-2012 Notification of 440 Explosive Waste Incinerator ESV Opening
- ○ 08-16-2012 Notification of SCR Malfunction at the Nitrocellulose Process Deviation
- ○ 10-09-2012 Notification of SCR Malfunction at the Nitrocellulose Process Deviation
- ○ 11-26-2012 Notification of Powerhouse Excess Opacity Malfunction
- ○ 11-08-2012 Notification of Powerhouse Excess Opacity Malfunction (November 8-9)
- ○ 12-05-2012 Notification of Powerhouse Excess Opacity Malfunction (December 5-7)
- ○ 12-20-2012 Notification of Powerhouse Excess Opacity Malfunction
- ○ 12-29-2012 Notification of Powerhouse Excess Opacity Malfunction

Attachment 3.a

Copies of Previously Submitted CEMS Reports

- ***3Q2012 CMS Report for the Nitrocellulose Process NOx Abatement System (25 Oct. 2012)***
- ***4Q2012 CMS Report for the Nitrocellulose Process NOx Abatement System (30 Jan. 2013)***
- ***3Q2012 CEMS Report for the Explosive Waste Incinerators (440/441) (25 Oct. 2012)***
- ***4Q2012 CEMS Report for the Explosive Waste Incinerators (440/441) (30 Jan. 2013)***

ORDNANCE SYSTEMS INC.
4050 Peppers Ferry Road, Route 114
Radford, VA 24141
Mail: P.O. Box 1, Radford, VA 24143
Telephone (540) 639-7323

25 October 2012

Ms. Frank Adams
Blue Ridge Regional Office
Virginia Department of Environmental Quality
3019 Peters Creek Road
Roanoke, VA 24019

RE: CMS Quarterly Report for the NOx Abatement System, Third Quarter - 2012
Radford Army Ammunition Plant, Radford, Virginia (Permit VA-20656)

Dear Mr. Adams:

BAE Systems Ordnance Systems Inc. (OSI), operating contractor for Radford Army Ammunition Plant (RFAAP) respectfully submits this quarterly report for the Continuous Monitoring System (CMS) for the NOx abatement system at the nitrocellulose area (Title V permit condition VII.A.2) for third calendar quarter of 2012 (July 1 through September 30). This report has been prepared to meet the reporting requirements listed in Title V permit condition XIII.F.3.c. During this quarter, the CMS percent unavailability was 1.97% and the percent excess emissions during monitored operating time was 0.00%. For the purpose of reporting source downtime, the Selective Catalytic Reduction (SCR) unit itself is considered to be the "source."

During this quarter, a cylinder gas audit (CGA) was conducted on September 17, 2012 using Protocol No. 1 sample gas in accordance with 40 CFR 60, Appendix F. The results of the CGA indicated that the monitor error was less than 15%, which is within the acceptable limits defined in 40 CFR 60, Appendix F, Section 5.2.3 (2). As required under Title V permit condition VII.C.3, the records from the CGA are maintained on site, and are not appended to this submittal.

As per 40 CFR 60, Appendix F, Section 4.1, a calibration drift check was conducted each calendar day that the source was in operation during this quarterly reporting period. During this reporting period, the high-level calibration drift on several dates exceeded twice the applicable drift specification. However, because this did not occur for five consecutive days, the NOx monitor is not considered to be "out-of-control" as defined in 40 CFR 60, Appendix F, Section 4.3, nor is the monitor data considered to be invalid for these dates.

On two dates during the reporting period (July 2 and August 25), the high-level calibration drift exceeded four times the applicable drift specification when the analyzer malfunctioned. As per 40 CFR 60, Appendix F, Section 4.3.1, the NOx monitor is considered to be "out-of-control" and the monitor data invalid from the previous good calibration drift check until the next good calibration drift check on the dates that four times the applicable drift specification was exceeded. In accordance with the requirements of 40 CFR 60, Appendix F, Section 4.3.1, the hourly NOx emission records were reviewed manually to identify them as "invalid" for the period prior to each instance that a calibration drift exceeded four times the applicable drift specification. All instances

identified as invalid are tabulated in the "monitor downtime" in Table 2 ("Monitoring System Summary") of the attached report.

Records of the one-hour average outlet NOx concentrations observed during this quarter are also subject to the reporting requirements of Title V permit condition XIII.F.3.c. Consistent with previous quarterly submittals for the facility, these data are not included herein, but are retained at RFAAP and available for VDEQ review.

If you have any questions or comments regarding this submittal, please contact MaryAnn Bogucki at 540-639-7688 or maryann.bogucki@baesystems.com.

Respectfully,

Jay Stewart
Environmental Manager

Coordination with RFAAP Staff:

Len DiIoia, Jr.

Enclosure: Attachment – NOx Monitor Downtime and Excess Emissions Report
Additional Certification Document

cc: RFAAP ACO Staff/ DiIoia
File

BAE SYSTEMS

ORDNANCE SYSTEMS INC.
4050 Peppers Ferry Road, Route 114
Radford, VA 24141
Mail: P.O. Box 1, Radford, VA 24143
Telephone (540) 639-7323

Certification of 25 October 2012 submission to Frank Adams (Virginia Department of Environmental Quality) of the Quarterly Report (Third Quarter, 2012) for the Continuous Monitoring System (CMS) for the NOx abatement system at the nitrocellulose area, as required under Permit VA20656 - Radford Army Ammunition Plant, Radford, Virginia.

DOCUMENT CERTIFICATION FORM

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE:
NAME: WM BYRON PENLAND
TITLE: LTC, COMMANDER
COMPANY: U.S. ARMY
DATE: 29 OCT 2012
REGISTRATION NUMBER: 20656
ADDRESS: PO Box 1
Radford, VA 24143

SIGNATURE:
NAME: Todd D. Hayes
TITLE: Director, Facility Support Services
COMPANY: BAE Systems Ordnance Systems Inc.
PHONE: (423) 578-6369
EMAIL: todd.hayes@baesystems.com
DATE: 25 Oct 12
REGISTRATION NUMBER: 20656
ADDRESS: PO Box 1
Radford, VA 24143

Attachment

NOx Monitor Downtime and Excess Emissions Report

CONTINUOUS MONITORING SYSTEM PERFORMANCE SUMMARY AND EMISSIONS DATA SUMMARY FOR THE CONTINUOUS NOX ANALYZER

Third Quarter 2012

SELECTIVE CATALYTIC REDUCTION UNIT RADFORD ARMY AMMUNITION PLANT RADFORD, VIRGINIA

Table 1 General information

Pollutant	Nitrogen oxides (NOx)
Reporting period	July 1 - September 30, 2012
Company	Raford Army Ammunition Plant (RFAAP), BAE Ordnance Systems Inc.
Emissions Limitation	125 ppmv (one-hour average), 2.8 lb/hr (one-hour average)
Address	Route 114, Radford, Virginia 24141
Monitor Manufacturer	Horiba
Monitor Model Number	ENDA-4120L
Date of last CMS Certification or Audit	Cylinder Gas Audit performed on 17 Sep 2012 - Passed
Process Unit Description	Scrubber/absorber and selective catalytic reduction (SCR) unit for control of NOx emissions from the manufacture of nitrocellulose

Source Operating Time = Time in Quarter - Source Down Time

Source operating Time = 2208 - 312 = 1,896 Hours

TOTAL SOURCE OPERATING TIME = 1896 Hours

Table 2 Monitoring System Summary Report

Causes of CMS Downtime	Total Down Time (hours)	Percent Unavailable[1]	Comments
a. Monitor Equipment Malfunctions	35.83	1.89%	This downtime is due to calibration drift exceeding 4X the performance specification (PS) on two separate occasions. On 7/2, the drift exceeded 4X the PS at 1550 and a good calibration was not obtained until later that day at 2050. (The SCR was down the day prior). On 8/25, at 0906, the calibration on the monitor exceeded 4X the PS. It was assumed that the data reported by the monitor was invalid from the prior good calibration on 8/24 at 0906 until the monitor was adjusted and a good calibration was obtained on 8/25 at 1850.
b. Non-monitor CMS Equipment Malfunctions	0.0	0.00%	
c. Calibration/QA	1.0	0.05%	On 8/27, the CEMS vendor was onsite inspecting the monitor. For the one hour noted, the CEMS was down while the vendor performed manual calibrations on the unit.
d. Other Known causes	0.5	0.03%	On 7/9, outlet NOx exceeded 250 PPM on the monitor. Per prior directions, the operators took the monitor offline to prevent unit damage. Subsequent instruction has been provided to indicate that this is not necessary for future incidents. The hourly value did not exceed 125 PPM.
e. Unknown Causes	0.0	0.00%	
Total	37.4	1.97%	

[1] Percent Unavailable calculated using the following equation:

(CMS Downtime During Source Operations/Source Operating Time) X 100 = Percent Unavailable

37.4 / 1896 X 100 = 1.97%

PERCENT UNAVAILABLE - 1.97%

Total Monitored Operating Time = Time in Quarter - Source Down Time - CMS Down Time During Operations

Total Monitored Operating Time =

2208 - 312 - 37 = 1859

Total Monitored Operating time = 1859 Hours

CONTINUOUS MONITORING SYSTEM PERFORMANCE SUMMARY AND EMISSIONS DATA SUMMARY FOR THE CONTINUOUS NOX ANALYZER

Third Quarter 2012

SELECTIVE CATALYTIC REDUCTION UNIT RADFORD ARMY AMMUNITION PLANT RADFORD, VIRGINIA

Table 3 Emissions Data Summary

Duration of excess emissions in reporting period due to:	Duration of Excess Emissions (hours)	Percent of Monitored Operating Time[2]	Comments
a. Startup/Shutdown	0.00	0.00%	
b. Control Equipment Problems	0.00	0.00%	
c. Process Problems	0.00	0.00%	
d. Fuel Problems	0.00	0.00%	
e. Other Known Causes	0.00	0.00%	
f. Unknown Causes	0.00	0.00%	
Total	0.00	0.00%	No periods were noted where the hourly avg NOx exceeded 125 PPM.

[2] Percentage of Monitored time calculated using the following equation:

(Duration of Excess Emissions/Monitored Operating Time) x 100 = Percent of Monitored Operating time

0 / 1859 X 100 = 0.00%

PERCENT OF MONITORED OPERATING TIME = 0.00%

Table 4 Determination of Excess Emissions Report Requirement

	Yes	No
Is the Percent Unavailability greater than 5% for the Reporting Period?		X
Is the Total Duration of Excess Emission Greater Than, or Equal To, 1% of the Operating Time? *		X

A description of any changes since last CMS, process, or controls report.

None

ORDNANCE SYSTEMS INC.
4050 Peppers Ferry Road, Route 114
Radford, VA 24141
Mail: P.O. Box 1, Radford, VA 24143
Telephone (540) 639-7323

30 January 2013

Mr. Frank Adams
Blue Ridge Regional Office
Virginia Department of Environmental Quality
3019 Peters Creek Road
Roanoke, VA 24019

RE: CMS Quarterly Report for the NOx Abatement System, Fourth Quarter - 2012
Radford Army Ammunition Plant, Radford, Virginia (Permit VA-20656)

Dear Mr. Adams:

BAE Systems Ordnance Systems Inc. (OSI), operating contractor for Radford Army Ammunition Plant (RFAAP) respectfully submits this quarterly report for the Continuous Monitoring System (CMS) for the NOx abatement system at the nitrocellulose area (Title V permit condition VII.A.2) for fourth calendar quarter of 2012 (October 1 through December 31). This report has been prepared to meet the reporting requirements listed in Title V permit condition XIII.F.3.c. During this quarter, the CMS percent unavailability was 5.90% and the percent excess emissions during monitored operating time was 0.00%. For the purpose of reporting source downtime, the Selective Catalytic Reduction (SCR) unit itself is considered to be the "source."

During this quarter, a cylinder gas audit (CGA) was conducted on December 10, 2012 using Protocol No. 1 sample gas in accordance with 40 CFR 60, Appendix F. The results of the CGA indicated that the monitor error was less than 15%, which is within the acceptable limits defined in 40 CFR 60, Appendix F, Section 5.2.3 (2). As required under Title V permit condition VII.C.3, the records from the CGA are maintained on site, and are not appended to this submittal.

As per 40 CFR 60, Appendix F, Section 4.1, a calibration drift check was conducted each calendar day that the source was in operation during this quarterly reporting period. During this reporting period, the high-level calibration drift on several dates exceeded twice the applicable drift specification. However, because this did not occur for five consecutive days, the NOx monitor is not considered to be "out-of-control" as defined in 40 CFR 60, Appendix F, Section 4.3, nor is the monitor data considered to be invalid for these dates.

On six occasions during the quarterly reporting period (November 3, 13, 28 [two events]; December 5 and 8), the high-level calibration drift exceeded four times the applicable drift specification when the analyzer malfunctioned. As per 40 CFR 60, Appendix F, Section 4.3.1, the NOx monitor is considered to be "out-of-control" and the monitor data invalid from the previous good calibration drift check until the next good calibration drift check on the dates that four times the applicable drift specification was exceeded. In accordance with the requirements of 40 CFR 60, Appendix F, Section 4.3.1, the hourly NOx emission records were reviewed manually to identify them as "invalid" for the period prior to each instance that a calibration drift exceeded four times the

applicable drift specification. All instances identified as invalid are tabulated in the "monitor downtime" in Table 2 ("Monitoring System Summary") of the attached report.

Records of the one-hour average outlet NOx concentrations observed during this quarter are also subject to the reporting requirements of Title V permit condition XIII.F.3.c. Consistent with previous quarterly submittals for the facility, these data are not included herein, but are retained at RFAAP and available for VDEQ review.

If you have any questions or comments regarding this submittal, please contact MaryAnn Bogucki at 540-639-7688 or maryann.bogucki@baesystems.com.

Respectfully,

Jay Stewart
Environmental Manager

Coordination with RFAAP Staff:

Len DiIoia, Jr.

Enclosure: Additional Certification Document
Attachment – NOx Monitor Downtime and Excess Emissions Report

cc: RFAAP ACO Staff/ DiIoia
File

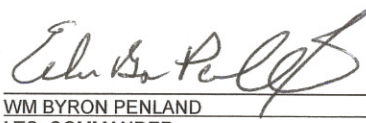
BAE SYSTEMS

ORDNANCE SYSTEMS INC.
4050 Peppers Ferry Road, Route 114
Radford, VA 24141
Mail: P.O. Box 1, Radford, VA 24143
Telephone (540) 639-7323

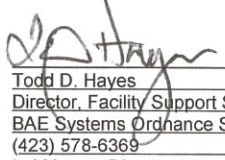
Certification of 30 January 2013 submission to Frank Adams (Virginia Department of Environmental Quality) of the Quarterly Report (Fourth Quarter of 2012) for the Continuous Monitoring System (CMS) for the NOx abatement system at the nitrocellulose area, as required under Permit VA20656 - Radford Army Ammunition Plant, Radford, Virginia.

DOCUMENT CERTIFICATION FORM

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE: 
NAME: WM BYRON PENLAND
TITLE: LTC, COMMANDER
COMPANY: U.S. ARMY

DATE: 28 JAN 2013
REGISTRATION NUMBER: 20656
ADDRESS: PO Box 1
Radford, VA 24143

SIGNATURE: 
NAME: Todd D. Hayes
TITLE: Director, Facility Support Services
COMPANY: BAE Systems Ordnance Systems Inc.
PHONE: (423) 578-6369
EMAIL: todd.hayes@baesystems.com

DATE: 23 JAN '13
REGISTRATION NUMBER: 20656
ADDRESS: PO Box 1
Radford, VA 24143

Attachment

NOx Monitor Downtime and Excess Emissions Report

CONTINUOUS MONITORING SYSTEM PERFORMANCE SUMMARY AND EMISSIONS DATA SUMMARY FOR THE CONTINUOUS NOX ANALYZER

Fourth Quarter 2012

SELECTIVE CATALYTIC REDUCTION UNIT RADFORD ARMY AMMUNITION PLANT RADFORD, VIRGINIA

Table 1 General information

Pollutant	Nitrogen oxides (NOx)
Reporting period	1 October - December 31, 2012
Company	Raford Army Ammunition Plant (RFAAP), BAE Ordnance Systems Inc.
Emissions Limitation	125 ppmv (one-hour average), 2.8 lb/hr (one-hour average)
Address	Route 114, Radford, Virginia 24141
Monitor Manufacturer	Horiba
Monitor Model Number	ENDA-4120L
Date of last CMS Certification or Audit	Cylinder Gas Audit (CGA) performed on 10 December 2012 - Passed
Process Unit Description	Scrubber/absorber and selective catalytic reduction (SCR) unit for control of NOx emissions from the manufacture of nitrocellulose

Source Operating Time = Time in Quarter - Source Down Time

Source operating Time = 2208 - 37 = 2,171 Hours

TOTAL SOURCE OPERATING TIME = 2171 Hours

CONTINUOUS MONITORING SYSTEM PERFORMANCE SUMMARY AND EMISSIONS DATA SUMMARY FOR THE CONTINUOUS NOX ANALYZER

Fourth Quarter 2012

SELECTIVE CATALYTIC REDUCTION UNIT RADFORD ARMY AMMUNITION PLANT RADFORD, VIRGINIA

Table 2 Monitoring System Summary Report

Causes of CMS Downtime	Total Down Time (hours)	Percent Unavailable[1]	Comments
a. Monitor Equipment Malfunctions	0.00	0.00%	
b. Non-monitor CMS Equipment Malfunctions	14.9	0.69%	Due a computer failure, calibration data is not available for 1/1/2013 (first day of the new quarter). For the purposes of reporting, the data from the last good calibration at 0906 on 12/31/2012 through the end of the quarter at midnight on 1/1/2013 is assumed to be invalid (14.9 hrs). The process was not operating during the time period for which data is missing on 12/31/2012.
c. Calibration/QA	113.2	5.21%	This downtime is due to calibration drift exceeding 4X the performance specification (PS) on the following occasions: ► On 11/3 at 0906, the calibration on the monitor exceeded 4X the PS. It was assumed that the data reported by the monitor was invalid from the prior good calibration on 11/2 at 0906 until the monitor was adjusted and a good calibration was obtained on 11/3 at 0922. As corrective action, the catalyst was replaced. ► On 11/13 at 0906, the calibration on the monitor exceeded 4X the PS. It was assumed that the data reported by the monitor was invalid from the prior good calibration on 11/12 at 1756 until the monitor was adjusted and a good calibration was obtained on 11/13 at 0945. As corrective action, the analyzer was cleaned and the catalyst replaced. ► On 11/28 at 0118, the calibration on the monitor exceeded 4X the PS. It was assumed that the data reported by the monitor was invalid from the prior good calibration on 11/27 at 0956 until the monitor was adjusted and a good calibration was obtained on 11/28 at 0135. ► On 11/28 at 0906, the calibration on the monitor exceeded 4X the PS. It was assumed that the data reported by the monitor was invalid from the prior good calibration on 11/28 at 0220 until the monitor was adjusted and a good calibration was obtained on 11/28 at 0947. ► On 12/5 at 0906, the calibration on the monitor exceeded 4X the PS. It was assumed that the data reported by the monitor was invalid from the prior good calibration on 12/4 at 1021 until the monitor was adjusted and a good calibration was obtained on 12/5 at 0931. As corrective action, the catalyst and mist catcher were replaced, and maintenance and valve replacements were also conducted on the span calibration gas system. ► On 12/8 at 0906, the calibration on the monitor exceeded 4X the PS. It was assumed that the data reported by the monitor was invalid from the prior good calibration on 12/7 at 0906 until the monitor was adjusted and a good calibration was obtained on 12/8 at 1108.
d. Other Known causes	0.0	0.00%	
e. Unknown Causes	0.0	0.00%	
Total	128.1	5.90%	

[1] Percent Unavailable calculated using the following equation:

(CMS Downtime During Source Operations/Source Operating Time) X 100 = Percent Unavailable

128.1 / 2171 X 100 = 5.90%

PERCENT UNAVAILABLE - 5.90%

Total Monitored Operating Time = Time in Quarter - Source Down Time - CMS Down Time During Operations

Total Monitored Operating Time =

2208 - 37 - 128 = 2043

Total Monitored Operating time = 2043 Hours

CONTINUOUS MONITORING SYSTEM PERFORMANCE SUMMARY AND EMISSIONS DATA SUMMARY FOR THE CONTINUOUS NOX ANALYZER

Fourth Quarter 2012

SELECTIVE CATALYTIC REDUCTION UNIT
RADFORD ARMY AMMUNITION PLANT
RADFORD, VIRGINIA

Table 3 Emissions Data Summary

Duration of excess emissions in reporting period due to:	Duration of Excess Emissions (hours)	Percent of Monitored Operating Time[2]	Comments
a. Startup/Shutdown	0.00	0.00%	
b. Control Equipment Problems	0.00	0.00%	
c. Process Problems	0.00	0.00%	
d. Fuel Problems	0.00	0.00%	
e. Other Known Causes	0.00	0.00%	
f. Unknown Causes	0.00	0.00%	
Total	0.00	0.00%	No periods were noted where the hourly avg NOx exceeded 125 PPM.

[2] Percentage of Monitored time calculated using the following equation:

(Duration of Excess Emissions/Monitored Operating Time) x 100 = Percent of Monitored Operating time

0 / 2043 X 100 = 0.00%

PERCENT OF MONITORED OPERATING TIME = 0.00%

Table 4 Determination of Excess Emissions Report Requirement

	Yes	No
Is the Percent Unavailability greater than 5% for the Reporting Period?	X	
Is the Total Duration of Excess Emission Greater Than, or Equal To, 1% of the Operating Time? *		X

A description of any changes since last CMS, process, or controls report.

None

ORDNANCE SYSTEMS INC.
4050 Peppers Ferry Road, Route 114
Radford, VA 24141
Mail: P.O. Box 1, Radford, VA 24143
Telephone (540) 639-7323

25 October 2012

Ms. Frank Adams
Blue Ridge Regional Office
Virginia Department of Environmental Quality
3019 Peters Creek Road
Roanoke, VA 24019

RE: CEMS Quarterly Report, Third Quarter - 2012
Explosive Waste Incinerators 4401/441 CO Analyzers
Radford Army Ammunition Plant, Radford, Virginia (Permit VA-20656)

Dear Mr. Adams:

BAE Systems Ordnance Systems Inc. (OSI), operating contractor for Radford Army Ammunition Plant (RFAAP) respectfully submits this quarterly report for the Continuous Emissions Monitoring System (CEMS) for the CO analyzers at the explosives waste incinerators 440/441. The attached data summary reports the CEMS performance for the third calendar quarter of 2012 (July 1 through September 30). During this quarter, the CEMS percent unavailability was 0.00% and 0.03% for 440 and 441, respectively. The percent excess emissions during monitored operating time were 0.27% and 0.05%, for 400 and 441, respectively. The results of the most recent relative test accuracy audit (RATA) and absolute calibration audit (ACA) for the incinerators are also appended to this report.

If you have any questions or comments please contact MaryAnn Bogucki at 540-639-7688 or maryann.bogucki@baesystems.com.

Respectfully,

Jay Stewart
Environmental Manager

Coordination with RFAAP Staff:

Len DiIoia, Jr.

Enclosure: Attachment A – CEMS Quarterly Emissions Summary Reports
Attachment B – Summary of RATA and ACA Results
Additional Certification Document

cc: RFAAP ACO Staff/ DiIoia
File

BAE SYSTEMS

ORDNANCE SYSTEMS INC.
4050 Peppers Ferry Road, Route 114
Radford, VA 24141
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Telephone (540) 639-7323

Certification of 25 October 2012 submission to Frank Adams (Virginia Department of Environmental Quality) of the Quarterly Report (Third Quarter, 2012) for the Continuous Monitoring System (CEMS) for the explosives waste incinerators 440/441, as required under Permit VA20656 - Radford Army Ammunition Plant, Radford, Virginia.

DOCUMENT CERTIFICATION FORM

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE:
NAME: WM BYRON PENLAND
TITLE: LTC, COMMANDER
COMPANY: U.S. ARMY

DATE: 25 OCT 2012
REGISTRATION NUMBER: 20656
ADDRESS: PO Box 1
Radford, VA 24143

SIGNATURE:
NAME: Todd D. Hayes
TITLE: Director, Facility Support Services
COMPANY: BAE Systems Ordnance Systems Inc.
PHONE: (423) 578-6369
EMAIL: todd.hayes@baesystems.com

DATE: 25 Oct 12
REGISTRATION NUMBER: 20656
ADDRESS: PO Box 1
Radford, VA 24143

Attachment A

CEMS Quarterly Emissions Summary Reports

CONTINUOUS MONITORING SYSTEM PERFORMANCE SUMMARY AND EMISSIONS DATA SUMMARY FOR THE CONTINUOUS CO ANALYZER

Third Quarter 2012

HAZARDOUS WASTE COMBUSTOR 440
RADFORD ARMY AMMUNITION PLANT
RADFORD, VIRGINIA

Table 1 General information

Pollutant	Carbon monoxide (CO), corrected to 7 percent oxygen (O_2)
Reporting period	July 1 - September 30, 2012
Company	Raford Army Ammunition Plant (RFAAP), BAE Ordnance Systems
Emissions Limitation	100 ppmv CO, corrected to 7 percent O_2 (hourly rolling average)
Address	Route 114, Radford, Virginia 24141
Monitor Manufacturer	Siemens
Monitor Model Number	Ultramat 6E and Oxymat 6E
Date of last CMS Certification or Audit	Absolute Calibration Audit (ACA) - 9 Aug 2012, Passed, see attached summary Relative Accuracy Test Audit (RATA) - 24 Apr 2012, Passed, see attached summary
Process Unit Description	Rotary kiln incinerator, afterburner, and evaporative cooler, with a baghouse, precooler, and scrubber for the control of source emissions

TOTAL SOURCE OPERATING TIME = 949 Hours

Table 2 Monitoring System Summary Report

Causes of CMS Downtime	Total Down Time (hours)	Percent Unavailable[1]	Comments
a. Monitor Equipment Malfunctions	0.00	0.00%	
b. Non-monitor CMS Equipment Malfunctions	0.00	0.00%	
c. Calibration/QA	0.00	0.00%	
d. Other Known causes	0.00	0.00%	
e. Unknown Causes	0.00	0.00%	
Total	0.00	0.00%	

[1] Percent Unavailable calculated using the following equation:

(CMS Downtime During Source Operations/Source Operating Time) X 100 = Percent Unavailable

\- / 949 X 100 = 0.00%

PERCENT UNAVAILABLE - 0.00%

Total Monitored Operating Time = Time in Quarter - Source Down Time - CMS Down Time During Operations

Total Monitored Operating time = 949 Hours

CONTINUOUS MONITORING SYSTEM PERFORMANCE SUMMARY AND EMISSIONS DATA SUMMARY FOR THE CONTINUOUS CO ANALYZER

Third Quarter 2012

HAZARDOUS WASTE COMBUSTOR 440
RADFORD ARMY AMMUNITION PLANT
RADFORD, VIRGINIA

Table 3 Emissions Data Summary

Duration of excess emissions in reporting period due to:	Duration of Excess Emissions (hours)	Percent of Monitored Operating Time[2]	Comments
a. Startup/Shutdown	0.53	0.06%	The exceedances were attributable to two malfunctions - one power failure, and one failure of the Delasco pump liner. Both events caused a combustion upset that led to elevated CO concentrations.
b. Control Equipment Problems	0.00	0.00%	
c. Process Problems	2.00	0.21%	The exceedances shown were attributable to problems with the combustion process upon shut off of the hazardous waste feed. A buildup of material in the kiln, coupled with the flush water required to quench the final burn off of materials, let to a combustion upset that caused the elevated CO concentrations. The combustion air on Incinerator 440 has been adjusted to help reduce the CO produced during these upsets.
d. Fuel Problems	0.00	0.00%	
e. Other Unknown Problems	0.00	0.00%	
f. Unknown Causes	0.00	0.00%	
Total	2.53	0.27%	

[2] Percentage of Monitored time calculated using the following equation:

(Duration of Excess Emissions/Monitored Operating Time) x 100 = Percent of Monitored Operating time

2.53 / 949 X 100 = 0.27%

PERCENT OF MONITORED OPERATING TIME = 0.27%

Table 4 Determination of Excess Emissions Report Requirement

	Yes	No
Is the Percent Unavailability greater than 5% for the Reporting Period?		X
Is the Total Duration of Excess Emission Greater Than, or Equal To, 1% of the Operating Time? *		X

A description of any changes since last CMS, process, or controls report.

The oxygen analyzer that was installed on Incinerator 441 failed during unit operation. As Incinerator 440 was down, the analyzer installed on Incinerator 440 was relocated to Incinerator 441. Per discussions with DEQ, an ACA was conducted on the relocated analyzer. The failed analyzer from Incinerator 441 is currently undergoing repair. Once the repairs are complete, the analyzer will be installed on Incinerator 440 in place of the relocated analyzer. As agreed with DEQ, a RATA will be conducted on the repaired analyzer once it is installed in the Incinerator 440 system.

CONTINUOUS MONITORING SYSTEM PERFORMANCE SUMMARY AND EMISSIONS DATA SUMMARY FOR THE CONTINUOUS CO ANALYZER

Third Quarter 2012

HAZARDOUS WASTE COMBUSTOR 441
RADFORD ARMY AMMUNITION PLANT
RADFORD, VIRGINIA

Table 1 General information

Pollutant	Carbon monoxide (CO), corrected to 7 percent oxygen (O_2)
Reporting period	July 1 - September 30, 2012
Company	Raford Army Ammunition Plant (RFAAP), BAE Ordnance Systems
Emissions Limitation	100 ppmv CO, corrected to 7 percent O_2 (hourly rolling average)
Address	Route 114, Radford, Virginia 24141
Monitor Manufacturer	Siemens
Monitor Model Number	Ultramat 6E and Oxymat 6E
Date of last CMS Certification or Audit	Absolute Calibration Audit (ACA) - 10 Sep 2012, Passed, see attached summary Relative Accuracy Test Audit (RATA) - 24 Apr 2012, Passed, see attached summary
Process Unit Description	Rotary kiln incinerator, afterburner, and evaporative cooler, with a baghouse, precooler, and scrubber for the control of source emissions

TOTAL SOURCE OPERATING TIME = 1254 Hours

Table 2 Monitoring System Summary Report

Causes of CMS Downtime	Total Down Time (hours)	Percent Unavailable[1]	Comments
a. Monitor Equipment Malfunctions	0.33	0.03%	The monitor downtime is a result of the O_2 analyzer failure that occurred while burning waste. While waste feed was immediately shut off, residual materials continued to burn in the kiln for approximately 20 minutes following the failure.
b. Non-monitor CMS Equipment Malfunctions	0.00	0.00%	
c. Calibration/QA	0.00	0.00%	
d. Other Known causes	0.00	0.00%	
e. Unknown Causes	0.00	0.00%	
Total	0.33	0.03%	

[1] Percent Unavailable calculated using the following equation:

(CMS Downtime During Source Operations/Source Operating Time) X 100 = Percent Unavailable

0.33 / 1254 X 100 = 0.03%

PERCENT UNAVAILABLE - 0.03%

Total Monitored Operating Time = Time in Quarter - Source Down Time - CMS Down Time During Operations

Total Monitored Operating time = 1253 Hours

CONTINUOUS MONITORING SYSTEM PERFORMANCE SUMMARY AND EMISSIONS DATA SUMMARY FOR THE CONTINUOUS CO ANALYZER

Third Quarter 2012

HAZARDOUS WASTE COMBUSTOR 441
RADFORD ARMY AMMUNITION PLANT
RADFORD, VIRGINIA

Table 3 Emissions Data Summary

Duration of excess emissions in reporting period due to:	Duration of Excess Emissions (hours)	Percent of Monitored Operating Time[2]	Comments
a. Startup/Shutdown	0.38	0.03%	The exceedances were attributable to two malfunctions - one power failure, and one failure of the evaporative cooler thermocouple. Both events caused a combustion upset that led to elevated CO concentrations.
b. Control Equipment Problems	0.00	0.00%	
c. Process Problems	0.23	0.02%	The exceedance shown was attributable to problems with the combustion process upon shut off of the hazardous waste feed. A unusually high buildup of material in the kiln, coupled with the excess flush water required to quench the final burn off of materials, let to a combustion upset that caused the elevated CO concentrations.
d. Fuel Problems	0.00	0.00%	
e. Other Unknown Problems	0.00	0.00%	
f. Unknown Causes	0.00	0.00%	
Total	0.62	0.05%	

[2] Percentage of Monitored time calculated using the following equation:

(Duration of Excess Emissions/Monitored Operating Time) x 100 = Percent of Monitored Operating time

0.62 / 1253 X 100 = 0.05%

PERCENT OF MONITORED OPERATING TIME = 0.05%

Table 4 Determination of Excess Emissions Report Requirement

	Yes	No
Is the Percent Unavailability greater than 5% for the Reporting Period?		X
Is the Total Duration of Excess Emission Greater Than, or Equal To, 1% of the Operating Time? *		X

A description of any changes since last CMS, process, or controls report.

The oxygen analyzer that was installed on Incinerator 441 failed during unit operation. As Incinerator 440 was down, the analyzer installed on Incinerator 440 was relocated to Incinerator 441. Per discussions with DEQ, an ACA was conducted on the relocated analyzer. The failed analyzer from Incinerator 441 is currently undergoing repair. Once the repairs are complete, the analyzer will be installed on Incinerator 440 in place of the relocated analyzer. As agreed with DEQ, a RATA will be conducted on the repaired analyzer once it is installed in the Incinerator 440 system.

Attachment B

Summary of RATA and ACA Results

Absolute Calibration Audit for Incinerator 440 (PRIMARY)

CEMS Information

Analyzer Type	Carbon Monoxide
Manufacturer	Siemens
Model Number	7MB2023
Serial Number	N/A
Span Value (FS)	3000 ppm
Range	3000 ppm

Cylinder Gas Information

	Audit Point 1	*Audit Point 2*	*Audit Point 3*
Certified Audit Value	0.00 ppm	1061.00 ppm	2239.00 ppm
Cylinder ID Number	A6952	CC351022	CC84309
Type of Certification	Certified Zero	Protocol 1	Protocol 1
Certificate Date	6/12/2012	7/10/2012	7/9/2012

Audit Results

Audit Date: 8/9/2012	*(ppm)*	*Time*	*(ppm)*	*Time*	*(ppm)*	*Time*
Test 1	0.000	12:12	1079.77	12:21	2212.50	12:15
Test 2	0.000	12:26	1089.84	12:32	2203.36	12:29
Test 3	0.891	12:36	1088.44	12:41	2194.45	12:38
Mean Average Difference (d)	0.297 ppm		25.016 ppm		35.563 ppm	
Accuracy (A)*	0.01%		0.83%		1.19%	

* See Appendix C for equations used to determine analyzer accuracy.

Absolute Calibration Audit for Incinerator 440 (PRIMARY)

CEMS Information

Analyzer Type	Carbon Monoxide
Manufacturer	Siemens
Model Number	7MB2023
Serial Number	N/A
Span Value (FS)	200 ppm
Range	200 ppm

Cylinder Gas Information

	Audit Point 1	*Audit Point 2*	*Audit Point 3*
Certified Audit Value	0.00 ppm	69.02 ppm	149.70 ppm
Cylinder ID Number	A6952	CC216589	CC132175
Type of Certification	Certified Zero	Protocol 1	Protocol 1
Certificate Date	6/12/2012	6/22/2012	6/28/2012

Audit Results

Audit Date: 8/9/2012	*(ppm)*	*Time*	*(ppm)*	*Time*	*(ppm)*	*Time*
Test 1	0.406	12:45	68.42	12:51	150.69	12:47
Test 2	0.000	12:54	68.06	12:59	149.11	12:56
Test 3	0.000	13:03	68.00	13:09	149.33	13:06
Mean Average Difference (d)	0.135 ppm		0.859 ppm		0.008 ppm	
Accuracy (A)*	0.07%		0.43%		0.00%	

* See Appendix C for equations used to determine analyzer accuracy.

Table 2 - Overall Summary of RATA Results and Evaluation Criteria

RADFORD ARMY AMMUNITION PLANT - INCINERATOR 440 CEMS SYSTEMS
April 26, 2012

CEMS description	Fuel Fired	Reporting units	Total valid runs	Valid runs used in RA	Relative accuracy	Performance (basis)
CO	Natural Gas	ppmdv @ 7% O2	10	9	0.50 %	Pass (applicable emissions standard)
O_2	Natural Gas	%dv	10	9	0.03 %	Pass (absolute difference)

Acceptance Criteria for CEMS Relative Accuracy Testing

Pollutant monitor	Criteria	Basis	Reference
CO CEMS	≤ 10%	Average reference method	40 CFR Part 60, Appendix B, PS 4B
	≤ 5%	Applicable emissions standard	
	≤ 5 ppm	Absolute average difference plus the 2.5% confidence coefficient	
O_2 CEMS	≤ 1.0% O_2	Absolute average difference	40 CFR Part 60, Appendix B, PS 3

Applicable Limits

CO 100 ppmdv @ 7% O2

O_2 Not Applicable

Absolute Calibration Audit for Incinerator 441 (PRIMARY)

CEMS Information

Analyzer Type	Carbon Monoxide
Manufacturer	Siemens
Model Number	7MB2023
Serial Number	N/A
Span Value (FS)	3000 ppm
Range	3000 ppm

Cylinder Gas Information

	Audit Point 1	*Audit Point 2*	*Audit Point 3*
Certified Audit Value	0.00 ppm	1061.00 ppm	2239.00 ppm
Cylinder ID Number	A6952	CC351022	CC84309
Type of Certification	Certified Zero	Protocol 1	Protocol 1
Certificate Date	6/12/2012	7/10/2012	7/9/2012

Audit Results

Audit Date: 9/10/2012	*(ppm)*	*Time*	*(ppm)*	*Time*	*(ppm)*	*Time*
Test 1	0.625	11:15	1079.06	11:19	2223.75	11:30
Test 2	2.438	11:36	1092.19	11:40	2226.56	11:45
Test 3	1.375	11:51	1090.31	11:54	2227.50	11:59
Mean Average Difference (d)	1.479 ppm		26.188 ppm		13.063 ppm	
Accuracy (A)*	0.05%		0.87%		0.44%	

* See Appendix C for equations used to determine analyzer accuracy.

Absolute Calibration Audit for Incinerator 441 (PRIMARY)

CEMS Information

Analyzer Type	Carbon Monoxide
Manufacturer	Siemens
Model Number	7MB2023
Serial Number	N/A
Span Value (FS)	200 ppm
Range	200 ppm

Cylinder Gas Information

	Audit Point 1	*Audit Point 2*	*Audit Point 3*
Certified Audit Value	0.00 ppm	69.02 ppm	149.70 ppm
Cylinder ID Number	A6952	CC216589	CC132175
Type of Certification	Certified Zero	Protocol 1	Protocol 1
Certificate Date	6/12/2012	6/22/2012	6/28/2012

Audit Results

Audit Date: 9/10/2012	*(ppm)*	*Time*	*(ppm)*	*Time*	*(ppm)*	*Time*
Test 1	1.625	12:05	71.69	12:07	161.25	12:14
Test 2	0.063	12:43	69.94	12:47	151.75	12:52
Test 3	0.250	12:55	69.13	12:59	151.75	13:04
Mean Average Difference (d)	0.646 ppm		1.230 ppm		5.217 ppm	
Accuracy (A)*	0.32%		0.62%		2.61%	

* See Appendix C for equations used to determine analyzer accuracy.

Absolute Calibration Audit for Incinerator 441 (PRIMARY)

CEMS Information

Analyzer Type	Oxygen
Manufacturer	Siemens
Model Number	7MB2023
Serial Number	N/A
Span Value (FS)	25 %
Range	25 %

Cylinder Gas Information

	Audit Point 1	*Audit Point 2*	*Audit Point 3*
Certified Audit Value	0.00 ppm	9.019 %	15.04 %
Cylinder ID Number	A6952	CC351022	CC84309
Type of Certification	Certified Zero	Protocol 1	Protocol 1
Certificate Date	6/12/2012	7/10/2012	7/9/2012

Audit Results

Audit Date: 9/10/2012	*(%)*	*Time*	*(%)*	*Time*	*(%)*	*Time*
Test 1	0.000	11:15	8.961	11:19	15.047	11:30
Test 2	0.000	11:36	8.867	11:40	15.047	11:45
Test 3	0.000	11:51	8.852	11:54	15.055	11:59
Mean Average Difference (d)	0.00 %		0.13 %		0.01 %	

* See Appendix C for equations used to determine analyzer accuracy.

Table 3 - Overall Summary of RATA Results and Evaluation Criteria

RADFORD ARMY AMMUNITION PLANT - INCINERATOR 441 CEMS SYSTEMS
April 24, 2012

CEMS description	Fuel Fired	Reporting units	Total valid runs	Valid runs used in RA	Relative accuracy	Performance (basis)
CO	Natural Gas	ppmdv @ 7% O2	10	9	0.98 %	Pass (applicable emissions standard)
O_2	Natural Gas	%dv	10	9	0.23 %	Pass (absolute difference)

Acceptance Criteria for CEMS Relative Accuracy Testing

Pollutant monitor	Criteria	Basis	Reference
CO CEMS	≤ 10% ≤ 5% ≤ 5 ppm	Average reference method Applicable emissions standard Absolute average difference plus the 2.5% confidence coefficient	40 CFR Part 60, Appendix B, PS 4B
O_2 CEMS	≤ 1.0% O_2	Absolute average difference	40 CFR Part 60, Appendix B, PS 3

Applicable Limits

CO 100 ppmdv @ 7% O2

O_2 Not Applicable

ORDNANCE SYSTEMS INC.
4050 Peppers Ferry Road, Route 114
Radford, VA 24141
Mail: P.O. Box 1, Radford, VA 24143
Telephone (540) 639-7323

30 January 2013

Mr. Frank Adams
Blue Ridge Regional Office
Virginia Department of Environmental Quality
3019 Peters Creek Road
Roanoke, VA 24019

RE: CEMS Quarterly Report, Fourth Quarter - 2012
Explosive Waste Incinerators 440/441 CO Analyzers
Radford Army Ammunition Plant, Radford, Virginia (Permit VA-20656)

Dear Mr. Adams:

BAE Systems Ordnance Systems Inc. (OSI), operating contractor for Radford Army Ammunition Plant (RFAAP) respectfully submits this quarterly report for the Continuous Emissions Monitoring System (CEMS) for the CO analyzers at the explosives waste incinerators 440/441. The attached data summary reports the CEMS performance for the fourth calendar quarter of 2012 (October 1 through December 31). During this quarter, the CEMS percent unavailability was 0.00% for both 440 and 441. The percent excess emissions during monitored operating time were 0.04% and 0.08%, for 400 and 441, respectively. The results of the most recent relative test accuracy audit (RATA) and absolute calibration audit (ACA) for the incinerators are also appended to this report.

If you have any questions or comments please contact MaryAnn Bogucki at 540-639-7688 or maryann.bogucki@baesystems.com.

Respectfully,

Jay Stewart
Environmental Manager

Coordination with RFAAP Staff:

Len DiIoia, Jr.

Enclosure: Additional Certification Document
Attachment A – CEMS Quarterly Emissions Summary Reports
Attachment B – Summary of RATA and ACA Results

cc: RFAAP ACO Staff/ DiIoia
File

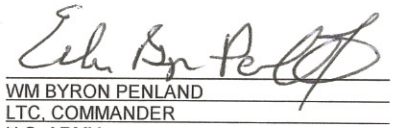
BAE SYSTEMS

ORDNANCE SYSTEMS INC.
4050 Peppers Ferry Road, Route 114
Radford, VA 24141
Mail: P.O. Box 1, Radford, VA 24143
Telephone (540) 639-7323

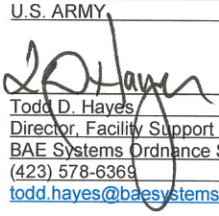
Certification of 30 January 2013 submission to Frank Adams (Virginia Department of Environmental Quality) of the Quarterly Report (Fourth Quarter of 2012) for the Continuous Monitoring System (CEMS) for the explosives waste incinerators 440/441, as required under Permit VA20656 - Radford Army Ammunition Plant, Radford, Virginia.

DOCUMENT CERTIFICATION FORM

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE: 
NAME: WM BYRON PENLAND
TITLE: LTC, COMMANDER
COMPANY: U.S. ARMY

DATE: 28 JAN 2013
REGISTRATION NUMBER: 20656
ADDRESS: PO Box 1
Radford, VA 24143

SIGNATURE: 
NAME: Todd D. Hayes
TITLE: Director, Facility Support Services
COMPANY: BAE Systems Ordnance Systems Inc.
PHONE: (423) 578-6369
EMAIL: todd.hayes@baesystems.com

DATE: 23 JAN '13
REGISTRATION NUMBER: 20656
ADDRESS: PO Box 1
Radford, VA 24143

Attachment A

CEMS Quarterly Emissions Summary Reports

CONTINUOUS MONITORING SYSTEM PERFORMANCE SUMMARY AND EMISSIONS DATA SUMMARY FOR THE CONTINUOUS CO ANALYZER

Fourth Quarter 2012

HAZARDOUS WASTE COMBUSTOR 440
RADFORD ARMY AMMUNITION PLANT
RADFORD, VIRGINIA

Table 1 General information

Pollutant	Carbon monoxide (CO), corrected to 7 percent oxygen (O_2)
Reporting period	October 1 - December 31, 2012
Company	Raford Army Ammunition Plant (RFAAP), BAE Ordnance Systems
Emissions Limitation	100 ppmv CO, corrected to 7 percent O_2 (hourly rolling average)
Address	Route 114, Radford, Virginia 24141
Monitor Manufacturer	Siemens
Monitor Model Number	Ultramat 6E and Oxymat 6E
Date of last CMS Certification or Audit	Absolute Calibration Audit (ACA) - 9 Aug 2012, Passed, see attached summary Relative Accuracy Test Audit (RATA) - 15 Oct 2012, Passed, see attached summary
Process Unit Description	Rotary kiln incinerator, afterburner, and evaporative cooler, with a baghouse, precooler, and scrubber for the control of source emissions

TOTAL SOURCE OPERATING TIME = 1041 Hours

Table 2 Monitoring System Summary Report

Causes of CMS Downtime	Total Down Time (hours)	Percent Unavailable[1]	Comments
a. Monitor Equipment Malfunctions	0.00	0.00%	
b. Non-monitor CMS Equipment Malfunctions	0.00	0.00%	
c. Calibration/QA	0.00	0.00%	
d. Other Known causes	0.00	0.00%	
e. Unknown Causes	0.00	0.00%	
Total	0.00	0.00%	

[1] Percent Unavailable calculated using the following equation:

(CMS Downtime During Source Operations/Source Operating Time) X 100 = Percent Unavailable

- / 1041 X 100 = 0.00%

PERCENT UNAVAILABLE - 0.00%

Total Monitored Operating Time = Time in Quarter - Source Down Time - CMS Down Time During Operations

Total Monitored Operating time = 1041 Hours

CONTINUOUS MONITORING SYSTEM PERFORMANCE SUMMARY AND EMISSIONS DATA SUMMARY FOR THE CONTINUOUS CO ANALYZER

Fourth Quarter 2012

HAZARDOUS WASTE COMBUSTOR 440
RADFORD ARMY AMMUNITION PLANT
RADFORD, VIRGINIA

Table 3 Emissions Data Summary

Duration of excess emissions in reporting period due to:	Duration of Excess Emissions (hours)	Percent of Monitored Operating Time[2]	Comments
a. Startup/Shutdown	0.27	0.03%	The noted exceedance was attributable to a power failure. This power failure caused a combustion upset that led to elevated CO concentrations.
b. Control Equipment Problems	0.00	0.00%	
c. Process Problems	0.13	0.01%	The exceedance shown was attributable to problems with the combustion process upon shut off of the hazardous waste feed. Upon investigation, it was found that the combustion air valve was not responding properly to control system demands, resulting in an upset in the combustoin operations and high CO concentrations. The valve was replaced and the problem mitigated.
d. Fuel Problems	0.00	0.00%	
e. Other Unknown Problems	0.00	0.00%	
f. Unknown Causes	0.00	0.00%	
Total	0.40	0.04%	

[2] Percentage of Monitored time calculated using the following equation:

(Duration of Excess Emissions/Monitored Operating Time) x 100 = Percent of Monitored Operating time

0.40 / 1041 X 100 = 0.04%

PERCENT OF MONITORED OPERATING TIME = 0.04%

Table 4 Determination of Excess Emissions Report Requirement

	Yes	No
Is the Percent Unavailability greater than 5% for the Reporting Period?		X
Is the Total Duration of Excess Emission Greater Than, or Equal To, 1% of the Operating Time? *		X

A description of any changes since last CMS, process, or controls report.

The oxygen analyzer that was installed on Incinerator 441 failed during unit operation in Q3 2012. As Incinerator 440 was down at the time, the analyzer installed on Incinerator 440 was relocated to Incinerator 441. In early Q4 2012, the broken analyer was been repaired and was installed on Incinerator 440. As agreed with DEQ, a RATA was conducted on the repaired analyzer once it was installed in the Incinerator 440 system. The results of that RATA are included with this CEMS report.

CONTINUOUS MONITORING SYSTEM PERFORMANCE SUMMARY AND EMISSIONS DATA SUMMARY FOR THE CONTINUOUS CO ANALYZER

Fourth Quarter 2012

HAZARDOUS WASTE COMBUSTOR 441
RADFORD ARMY AMMUNITION PLANT
RADFORD, VIRGINIA

Table 1 General information

Pollutant	Carbon monoxide (CO), corrected to 7 percent oxygen (O_2)
Reporting period	October 1 - December 31, 2012
Company	Raford Army Ammunition Plant (RFAAP), BAE Ordnance Systems
Emissions Limitation	100 ppmv CO, corrected to 7 percent O_2 (hourly rolling average)
Address	Route 114, Radford, Virginia 24141
Monitor Manufacturer	Siemens
Monitor Model Number	Ultramat 6E and Oxymat 6E
Date of last CMS Certification or Audit	Absolute Calibration Audit (ACA) - 20 Dec 2012, Passed, see attached summary Relative Accuracy Test Audit (RATA) - 24 Apr 2012, Passed, see attached summary
Process Unit Description	Rotary kiln incinerator, afterburner, and evaporative cooler, with a baghouse, precooler, and scrubber for the control of source emissions

TOTAL SOURCE OPERATING TIME = 260 Hours

Table 2 Monitoring System Summary Report

Causes of CMS Downtime	Total Down Time (hours)	Percent Unavailable[1]	Comments
a. Monitor Equipment Malfunctions	0.00	0.00%	
b. Non-monitor CMS Equipment Malfunctions	0.00	0.00%	
c. Calibration/QA	0.00	0.00%	
d. Other Known causes	0.00	0.00%	
e. Unknown Causes	0.00	0.00%	
Total	0.00	0.00%	

[1] Percent Unavailable calculated using the following equation:

(CMS Downtime During Source Operations/Source Operating Time) X 100 = Percent Unavailable

- / 260 X 100 = 0.00%

PERCENT UNAVAILABLE - 0.00%

Total Monitored Operating Time = Time in Quarter - Source Down Time - CMS Down Time During Operations

Total Monitored Operating time = 260 Hours

CONTINUOUS MONITORING SYSTEM PERFORMANCE SUMMARY AND EMISSIONS DATA SUMMARY FOR THE CONTINUOUS CO ANALYZER

Fourth Quarter 2012

HAZARDOUS WASTE COMBUSTOR 441
RADFORD ARMY AMMUNITION PLANT
RADFORD, VIRGINIA

Table 3 Emissions Data Summary

Duration of excess emissions in reporting period due to:	Duration of Excess Emissions (hours)	Percent of Monitored Operating Time[2]	Comments
a. Startup/Shutdown	0.00	0.00%	
b. Control Equipment Problems	0.00	0.00%	
c. Process Problems	0.20	0.08%	The exceedance shown was attributable to problems with the combustion process upon shut off of the hazardous waste feed. Upon investigation, it was found that the combustion air valve was not responding properly to control system demands, resulting in an upset in the combustoin operations and high CO concentrations. The valve was replaced and the problem mitigated.
d. Fuel Problems	0.00	0.00%	
e. Other Unknown Problems	0.00	0.00%	
f. Unknown Causes	0.00	0.00%	
Total	0.20	0.08%	

[2] Percentage of Monitored time calculated using the following equation:

(Duration of Excess Emissions/Monitored Operating Time) x 100 = Percent of Monitored Operating time

0.20 / 260 X 100 = 0.08%

PERCENT OF MONITORED OPERATING TIME = 0.08%

Table 4 Determination of Excess Emissions Report Requirement

	Yes	No
Is the Percent Unavailability greater than 5% for the Reporting Period?		X
Is the Total Duration of Excess Emission Greater Than, or Equal To, 1% of the Operating Time? *		X

A description of any changes since last CMS, process, or controls report.

None.

Attachment B

Summary of RATA and ACA Results

Absolute Calibration Audit for Incinerator 440 (PRIMARY)

CEMS Information

Analyzer Type	Carbon Monoxide
Manufacturer	Siemens
Model Number	7MB2023
Serial Number	N/A
Span Value (FS)	3000 ppm
Range	3000 ppm

Cylinder Gas Information

	Audit Point 1	*Audit Point 2*	*Audit Point 3*
Certified Audit Value	0.00 ppm	1061.00 ppm	2239.00 ppm
Cylinder ID Number	A6952	CC351022	CC84309
Type of Certification	Certified Zero	Protocol 1	Protocol 1
Certificate Date	6/12/2012	7/10/2012	7/9/2012

Audit Results

Audit Date: 8/9/2012	*(ppm)*	*Time*	*(ppm)*	*Time*	*(ppm)*	*Time*
Test 1	0.000	12:12	1079.77	12:21	2212.50	12:15
Test 2	0.000	12:26	1089.84	12:32	2203.36	12:29
Test 3	0.891	12:36	1088.44	12:41	2194.45	12:38
Mean Average Difference (d)	0.297 ppm		25.016 ppm		35.563 ppm	
Accuracy (A)*	0.01%		0.83%		1.19%	

* See Appendix C for equations used to determine analyzer accuracy.

Absolute Calibration Audit for Incinerator 440 (PRIMARY)

CEMS Information

Analyzer Type	Carbon Monoxide
Manufacturer	Siemens
Model Number	7MB2023
Serial Number	N/A
Span Value (FS)	200 ppm
Range	200 ppm

Cylinder Gas Information

	Audit Point 1	*Audit Point 2*	*Audit Point 3*
Certified Audit Value	0.00 ppm	69.02 ppm	149.70 ppm
Cylinder ID Number	A6952	CC216589	CC132175
Type of Certification	Certified Zero	Protocol 1	Protocol 1
Certificate Date	6/12/2012	6/22/2012	6/28/2012

Audit Results

Audit Date: 8/9/2012	*(ppm)*	*Time*	*(ppm)*	*Time*	*(ppm)*	*Time*
Test 1	0.406	12:45	68.42	12:51	150.69	12:47
Test 2	0.000	12:54	68.06	12:59	149.11	12:56
Test 3	0.000	13:03	68.00	13:09	149.33	13:06
Mean Average Difference (d)	0.135 ppm		0.859 ppm		0.008 ppm	
Accuracy (A)*	0.07%		0.43%		0.00%	

* See Appendix C for equations used to determine analyzer accuracy.

Absolute Calibration Audit for Incinerator 440 (PRIMARY)

CEMS Information

Analyzer Type	Oxygen
Manufacturer	Siemens
Model Number	7MB2023
Serial Number	N/A
Span Value (FS)	25 %
Range	25 %

Cylinder Gas Information

	Audit Point 1	*Audit Point 2*	*Audit Point 3*
Certified Audit Value	0.00 ppm	9.019 %	15.04 %
Cylinder ID Number	A6952	CC351022	CC84309
Type of Certification	Certified Zero	Protocol 1	Protocol 1
Certificate Date	6/12/2012	7/10/2012	7/9/2012

Audit Results

Audit Date: 8/9/2012	*(%)*	*Time*	*(%)*	*Time*	*(%)*	*Time*
Test 1	0.000	12:12	8.99	12:21	14.81	12:15
Test 2	0.000	12:26	8.49	12:32	14.78	12:29
Test 3	0.012	12:36	8.49	12:41	14.78	12:38
Mean Average Difference (d)	0.00 %		0.36 %		0.25 %	

* See Appendix C for equations used to determine analyzer accuracy.

Table 2 - Overall Summary of RATA Results and Evaluation Criteria

RADFORD ARMY AMMUNITION PLANT - INCINERATOR 440 CEMS SYSTEMS
October 15, 2012

CEMS description	Fuel Fired	Reporting units	Total valid runs	Valid runs used in RA	Relative accuracy	Performance (basis)
CO	Natural Gas	ppmdv @ 7% O2	10	9	0.95 %	Pass (applicable emissions standard)
O_2	Natural Gas	%dv	10	9	0.01 %	Pass (absolute difference)

Acceptance Criteria for CEMS Relative Accuracy Testing

Pollutant monitor	Criteria	Basis	Reference
CO CEMS	≤ 10%	Average reference method	40 CFR Part 60, Appendix B, PS 4B
	≤ 5%	Applicable emissions standard	
	≤ 5 ppm	Absolute average difference plus the 2.5% confidence coefficient	
O_2 CEMS	≤ 1.0% O_2	Absolute average difference	40 CFR Part 60, Appendix B, PS 3

Applicable Limits

CO	100 ppmdv @ 7% O2
O_2	Not Applicable

Absolute Calibration Audit for Incinerator 441 (PRIMARY)

CEMS Information

Analyzer Type	Carbon Monoxide
Manufacturer	Siemens
Model Number	7MB2023
Serial Number	N/A
Span Value (FS)	3000 ppm
Range	3000 ppm

Cylinder Gas Information

	Audit Point 1	*Audit Point 2*	*Audit Point 3*
Certified Audit Value	0.00 ppm	1061.00 ppm	2239.00 ppm
Cylinder ID Number	A6952	CC351022	CC84309
Type of Certification	Certified Zero	Protocol 1	Protocol 1
Certificate Date	6/12/2012	7/10/2012	7/9/2012

Audit Results

Audit Date: 12/20/2012	*(ppm)*	*Time*	*(ppm)*	*Time*	*(ppm)*	*Time*
Test 1	0.172	10:03	1072.031	10:08	2177.109	10:17
Test 2	1.250	10:28	1080.703	10:32	2206.641	10:44
Test 3	3.672	10:50	1088.438	10:54	2216.719	10:59
Mean Average Difference (d)	1.698 ppm		19.391 ppm		38.844 ppm	
Accuracy (A)*	0.06%		0.65%		1.29%	

* See Appendix C for equations used to determine analyzer accuracy.

Absolute Calibration Audit for Incinerator 441 (PRIMARY)

CEMS Information

Analyzer Type	Carbon Monoxide
Manufacturer	Siemens
Model Number	7MB2023
Serial Number	N/A
Span Value (FS)	200 ppm
Range	200 ppm

Cylinder Gas Information

	Audit Point 1	*Audit Point 2*	*Audit Point 3*
Certified Audit Value	0.00 ppm	69.02 ppm	149.70 ppm
Cylinder ID Number	A6952	CC216589	CC132175
Type of Certification	Certified Zero	Protocol 1	Protocol 1
Certificate Date	6/12/2012	6/22/2012	6/28/2012

Audit Results

Audit Date: 12/20/2012	*(ppm)*	*Time*	*(ppm)*	*Time*	*(ppm)*	*Time*
Test 1	3.031	11:06	70.203	11:11	151.328	11:16
Test 2	0.578	11:21	69.859	11:25	151.391	11:30
Test 3	0.453	11:36	69.781	11:39	151.594	11:44
Mean Average Difference (d)	1.354 ppm		0.928 ppm		1.738 ppm	
Accuracy (A)*	0.68%		0.46%		0.87%	

* See Appendix C for equations used to determine analyzer accuracy.

Absolute Calibration Audit for Incinerator 441 (PRIMARY)

CEMS Information

Analyzer Type	Oxygen
Manufacturer	Siemens
Model Number	7MB2023
Serial Number	N/A
Span Value (FS)	25 %
Range	25 %

Cylinder Gas Information

	Audit Point 1	*Audit Point 2*	*Audit Point 3*
Certified Audit Value	0.00 ppm	9.019 %	15.04 %
Cylinder ID Number	A6952	CC351022	CC84309
Type of Certification	Certified Zero	Protocol 1	Protocol 1
Certificate Date	6/12/2012	7/10/2012	7/9/2012

Audit Results

Audit Date: 12/20/2012	*(%)*	*Time*	*(%)*	*Time*	*(%)*	*Time*
Test 1	0.20	10:03	9.14	10:08	15.14	10:17
Test 2	0.25	10:28	9.17	10:32	15.18	10:44
Test 3	0.30	10:50	9.22	10:54	15.15	10:59
Mean Average Difference (d)	0.25 %		0.16 %		0.12 %	

* See Appendix C for equations used to determine analyzer accuracy.

Table 3 - Overall Summary of RATA Results and Evaluation Criteria

RADFORD ARMY AMMUNITION PLANT - INCINERATOR 441 CEMS SYSTEMS
April 24, 2012

CEMS description	Fuel Fired	Reporting units	Total valid runs	Valid runs used in RA	Relative accuracy	Performance (basis)
CO	Natural Gas	ppmdv @ 7% O2	10	9	0.98 %	Pass (applicable emissions standard)
O_2	Natural Gas	%dv	10	9	0.23 %	Pass (absolute difference)

Acceptance Criteria for CEMS Relative Accuracy Testing

Pollutant monitor	Criteria	Basis	Reference
CO CEMS	≤ 10%	Average reference method	40 CFR Part 60, Appendix B, PS 4B
	≤ 5%	Applicable emissions standard	
	≤ 5 ppm	Absolute average difference plus the 2.5% confidence coefficient	
O_2 CEMS	≤ 1.0% O_2	Absolute average difference	40 CFR Part 60, Appendix B, PS 3

Applicable Limits

CO	100 ppmdv @ 7% O2
O_2	Not Applicable

Attachment 3.b

Copies of Previously Submitted MACT Reports

2H2012 MACT Subpart EEE Report - RFAAP Explosive Waste Incinerators
(submitted by BAE Systems OSI on 20 February 2013)

BAE SYSTEMS

ORDNANCE SYSTEMS INC.
4050 Peppers Ferry Road, Route 114
Radford, VA 24141
Mail: P.O. Box 1, Radford, VA 24143
Telephone (540) 639-7323

20 February 2013

Mr. Frank Adams
Blue Ridge Regional Office
Virginia Department of Environmental Quality
3019 Peters Creek Road
Roanoke, VA 24019

Subject: Semiannual MACT Subpart EEE Report (2H2012)
Explosive Waste Incinerators 440/441
Radford Army Ammunition Plant, Radford, Virginia (Permit VA-20656)

Dear Mr. Adams:

BAE Systems Ordnance Systems Inc. (OSI), operating contractor for Radford Army Ammunition Plant (RFAAP) respectfully submits this semiannual MACT Compliance Report pursuant to 40 CFR 63 Subpart EEE for the explosives waste incinerators 440/441. The attached report covers the time period of July 1 through December 31, 2012.

If you should have any questions or comments please contact MaryAnn Bogucki at 540-639-7688 or maryann.bogucki@baesystems.com.

Respectfully,

Jay Stewart
Environmental Manager

Coordination with RFAAP Staff:

Len DiIoia, Jr.

Enclosure: Additional Certification Document
Attachment A – Semiannual CEMS and Emissions Summary Report for Incinerator 440
Attachment B – Semiannual CEMS and Emissions Summary Report for Incinerator 441

cc: RFAAP ACO Staff/ DiIoia
File

BAE SYSTEMS

ORDNANCE SYSTEMS INC.
4050 Peppers Ferry Road, Route 114
Radford, VA 24141
Mail: P.O. Box 1, Radford, VA 24143
Telephone (540) 639-7323

Certification of 20 February 2013 submission to Frank Adams (Virginia Department of Environmental Quality) of the Semiannual MACT Subpart EEE Compliance Report (2H2012) for the explosives waste incinerators 440/441, as required under Permit VA20656 - Radford Army Ammunition Plant, Radford, Virginia.

DOCUMENT CERTIFICATION FORM

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE:
NAME: WM BYRON PENLAND
TITLE: LTC, COMMANDER
COMPANY: U.S. ARMY

DATE: 13 FEB 2013
REGISTRATION NUMBER: 20656
ADDRESS: PO Box 1
Radford, VA 24143

SIGNATURE:
NAME: Todd D. Hayes
TITLE: Director, Facility Support Services
COMPANY: BAE Systems Ordnance Systems Inc.
PHONE: (423) 578-6369
EMAIL: todd.hayes@baesystems.com

DATE: 13 Feb '13
REGISTRATION NUMBER: 20656
ADDRESS: PO Box 1
Radford, VA 24143

Attachment A

Semiannual CEMS and Emissions Summary Report for Incinerator 440

National Emission Standards for Hazardous Air Pollutants

for Hazardous Waste Combustors

Incinerator 440

Summary Report: Excess Emission and Continuous Monitoring System Performance

and Periodic Startup, Shutdown, and Malfunction Report

The following report provides all information required pursuant to 40 CFR 63.10(e)(3) for the Excess Emission and Continuous Monitoring System Performance Summary Report and 40 CFR 63.10(d)(5)(i) for the Periodic Startup, Shutdown, and Malfunction Report. These reports are submitted to satisfy the semi-annual reporting requirements of 40 CFR Part 63, Subpart EEE, the National Emission Standard for Hazardous Air Pollutants for Hazardous Waste Combustors (HWC NESHAP).

A.1 Facility Information	
Owner/Operator:	US Department of Defense/BAE Systems, Ordnance Systems, Inc.
Facility Location:	Radford Army Ammunition Plant (RFAAP)
Street Address:	Route 114 Radford, Virginia 24143-0100
Contact Information:	Mr. Jay Stewart Environmental Manager BAE Systems, Ordnance Systems, Inc. P.O. Box 1 Radford, Virginia 24143-0100 540.639.7785 jay.stewart@baesystems.com
Facility Classification:	Major stationary source of hazardous air pollutants (HAPs)

A.2 Applicability
Incinerator 440 is regulated under the Phase I standards of 40 CFR Part 63 Subpart EEE (HWC NESHAP), promulgated on October 12, 2005.

B. Identification of Each Hazardous Air Pollutant Monitored	
Hazardous Air Pollutant	**Type of Monitoring**
Dioxins/furans (D/F)	Continuous process monitoring
Mercury	Continuous process monitoring
Semivolatile metals (SVM) - lead and cadmium	Continuous process monitoring
Low volatile metals (LVM) - arsenic, beryllium, and chromium	Continuous process monitoring
Hydrogen chloride and chlorine (HCl/Cl_2)	Continuous process monitoring
Other metallic HAPs (using particulate matter as a surrogate)	Continuous process monitoring
Other organic HAPs (using carbon monoxide, hydrocarbons, and destruction and removal efficiency as surrogates)	Continuous process monitoring and continuous emissions monitoring systems (CEMS)

C. Reporting Period			
Start:	1 July 2012	End:	31 December 2012

D. Source Information	
Affected Source:	Incinerator 440
Air Pollution Control:	Fabric filter baghouse, gas pre-cooler, and packed bed scrubber

E.1. Applicable Emission Standards

Regulatory Citation	Hazardous Air Pollutant	Emission Standard
40 CFR § 63.1219(a)(1)(ii)	Dioxins/furans (D/F)	0.40 ng TEQ/dscm [1]
40 CFR § 63.1219(a)(2)	Mercury	130 μg/dscm [1]
40 CFR § 63.1219(a)(3)	Semivolatile metals (SVM) - lead and cadmium	230 μg/dscm [1]
40 CFR § 63.1219(a)(4)	Low volatile metals (LVM) - arsenic, beryllium, and chromium	92 μg/dscm [1]
40 CFR § 63.1219(a)(6)	Hydrogen chloride and chlorine (HCl/Cl_2)	32 ppmv, combined, expressed as Cl, dry basis [1]
40 CFR § 63.1219(a)(7)	Particulate matter (PM)	0.013 gr/dscf [1]
40 CFR § 63.1219(a)(5)(i)	Carbon monoxide (CO)	100 ppmv, 1-hour rolling average, dry basis [1]
40 CFR § 63.1219(a)(5)(ii)	Hydrocarbons (HC)	10 ppmv, 1-hour rolling average, dry basis [1]
40 CFR § 63.1219(c)(1)	Destruction and removal efficiency	99.99 percent'

[1] Corrected to seven percent oxygen

E.2. Operating Parameter Limits

In accordance with 40 CFR § 63.1209, RFAAP has established the following operating parameter limits (OPLs) to demonstrate continuous compliance with the emission standards of the HWC NESHAP. These OPLs were established during the most recent comprehensive performance test (CPT) and were documented in RFAAP's Notification of Compliance (NOC) dated June 18, 2012.

Operating Parameter	Limit	Averaging Period [1]	Applicable Standards
Minimum kiln exit temperature	1306°F	HRA	HC, DRE, D/F
Minimum afterburner temperature	1605°F	HRA	HC, DRE, D/F
Maximum stack CO concentration [2]	100 ppmv, corrected to 7% oxygen	HRA	HC, DRE
Maximum total hazardous waste feed rate	2,061 lb/hr	HRA	HC, DRE, D/F
Maximum mercury feed rate [3]	0.00040 lb/hr	12-hr RA	Mercury
Maximum ash feed rate	48 lb/hr	12-hr RA	PM
Maximum semivolatile metals feed rate	6.4 lb/hr	12-hr RA	SVM
Maximum low volatile metals feed rate	1.7 lb/hr	12-hr RA	LVM
Maximum chlorine feed rate	19 lb/hr	12-hr RA	SVM, LVM, HCl/Cl_2

E.2. Operating Parameter Limits (continued)			
Operating Parameter	**Limit**	**Averaging Period [1]**	**Applicable Standards**
Maximum baghouse inlet temperature	356°F	HRA	D/F, LVM, SVM
Minimum wet scrubber pressure drop [4]	0.15 in. w.c.	HRA	HCl/Cl_2
Minimum neutralization tank pH	6.8	HRA	HCl/Cl_2
Minimum total scrubber system liquid flow rate	70 gpm	HRA	HCl/Cl_2
Minimum flue gas velocity [3]	20 ft/sec	HRA	Mercury
Maximum flue gas velocity	50 ft/sec	HRA	HC, DRE, D/F, PM, SVM, LVM, HCl/Cl_2
Maximum kiln pressure	Below atmospheric	Instantaneous with 10-second delay	Fugitive emissions

[1] HRA refers to hourly rolling average. 12-hr RA refers to 12-hour rolling average.

[2] RFAAP monitors the stack CO concentration as an indicator of proper operation of the waste firing system.

[3] Together, these two OPLs demonstrate that the maximum mercury theoretical emission concentration is always less than the emission standard of 130 µg/dscm, corrected to 7% oxygen.

[4] This limit is based on manufacturer's recommendations, design specifications, or HWC NESHAP requirements rather than CPT demonstrations.

F and G. Monitoring Equipment				
Description	**Instrument Type**	**Manufacturer**	**Model**	**Audit Date**
Total hazardous waste feed rate	Coriolis flow meter	Micro Motion	DL-100	Jan 2013
Mercury feed rate				
Ash feed rate				
Semivolatile metals feed rate				
Low volatile metals feed rate				
Chlorine feed rate				
Kiln exit temperature	Thermocouple	Chromel-Alumel	Type K	Jan 2013
Afterburner temperature	Thermocouple	Chromel-Alumel	Type K	Jan 2013
Stack CO concentration	CO analyzer	Siemens	Ultramat 6E	Feb 2013
Baghouse inlet temperature	Thermocouple	Iron Constantan	Type J	Dec 2012
Wet scrubber pressure drop	Pressure transmitter	Taylor	504T	Dec 2012
Neutralization tank pH	pH analyzer	Foxboro	870 IT	Jan 2013
Total scrubber system liquid flow rate	Magnetic flow meter	Brooks	7400	Sep 2012
Flue gas velocity	Annubar flow meter	Dietrich Standard	Diamond II	Jan 2013
Kiln pressure	Pressure transmitter	Rosemount	1151 DP	Dec 2012

H. Operating Time		
Total operating time of affected source during the reporting period:	1991	hours
I. Emission Data Summary		
Total duration of excess emissions/parameter exceedances:	4.2	hours
Percent of total source operating time during which excess emissions/parameter exceedances occurred: [1]	0.21	%
Summary of causes of excess emissions/parameter exceedances:		
Startup/shutdown/malfunction	48	%
Control equipment problems	0	%
Process problems	26	%
Other known causes	26	%
Other unknown causes	0	%

[1] The duration shown represents the summed duration of each excess emission and OPL exceedance documented on the incinerator. The OPL exceedances may indicate but do not firmly guarantee that an emissions exceedance occurred.

J. Continuous Monitoring Systems (CMS) Performance Summary		
Total duration of CMS downtime:	0.0	hours
Percent of total source operating time during which CMS were down:	0.00	%
Summary of causes of CMS downtime:		
Monitoring equipment malfunctions	0	%
Non-monitoring equipment malfunctions	0	%
Quality assurance/quality control calibrations	0	%
Other known causes	0	%
Other unknown causes	0	%

K. Changes in Continuous Monitoring Systems, Processes, or Controls		
Any changes in CMS, processes, or controls since the last reporting period?	☒ Yes	☐ No

If yes, describe changes:
1. The Honeywell/L&N pH analyzer referenced in prior reports was replaced in 2010 with a Foxboro pH analyzer with similar performance specifications. This report reflects the current instrumentation that is installed.
2. On 9 Sep 2012, the oxygen analyzer on Incinerator 441 failed. As Incinerator 440 was down at the time, the analyzer from Incinerator 440 was removed and installed in the Incinerator 441 system. Prior to commencing waste feed, an absolute calibration audit (ACA) was performed to ensure proper installation of the analyzer. After the broken oxygen analyzer was repaired, it was installed in the Incinerator 440 system. Per a prior agreement with VDEQ, a relative accuracy test audit (RATA) was performed on the Incinerator 440 installation prior to commencing waste feed.

L. Report Applicability		
Is the total duration of excess emissions or process or control system parameter exceedances for the reporting period 1 percent or greater of the total operating time for the reporting period?	☐ Yes	☒ No
Is the total CMS downtime for the reporting period 5 percent or greater of the total operating time for the reporting period?	☐ Yes	☒ No

L. Report Applicability (continued)

Pursuant to 40 CFR 63.10(e)(3)(viii), if you answered "Yes" to either of the questions above, the additional reporting information specified in 40 CFR 63.10(e)(3)(v) must be provided along with this Summary Report. Otherwise, only the Summary Report is required.

M. Actions Taken During Startups, Shutdowns, and Malfunctions

In accordance with 40 CFR § 63.1206(c)(2), RFAAP has prepared and at all times operates according to a startup, shutdown, and malfunction (SSM) plan as specified in 40 CFR § 63.6(e)(3). During the reporting period, all actions taken during SSM periods were consistent with the procedures specified in the SSM plan, except as noted below.

Event Date	Description	Date Reported to DEQ	Follow-up Actions
None.			

N. Malfunctions

The following malfunctions occurred during the reporting period and may have caused an applicable HWC NESHAP emission standard to be exceeded.

Description of Malfunction and Corrective Actions	Duration (min)	Occurrences
A power failure caused kiln and afterburner temperature excursions, high carbon monoxide emissions, and a baghouse bypass. Power was restored and the unit was brought back online.	37	2
The delasco pump liner burst, causing a combustion upset that led to high carbon monoxide emissions. The liner was replaced and feed resumed.	14	1
One of the afterburner flames failed during or immediately following waste feed operations, causing a combustion upset. All operating parameter limits and monitored emissions remained within limits. The flame detector and the combustion air valve were replaced.	75	4

Attachment B

Semiannual CEMS and Emissions Summary Report for Incinerator 441

National Emission Standards for Hazardous Air Pollutants

for Hazardous Waste Combustors

Incinerator 441

Summary Report: Excess Emission and Continuous Monitoring System Performance

and Periodic Startup, Shutdown, and Malfunction Report

The following report provides all information required pursuant to 40 CFR 63.10(e)(3) for the Excess Emission and Continuous Monitoring System Performance Summary Report and 40 CFR 63.10(d)(5)(i) for the Periodic Startup, Shutdown, and Malfunction Report. These reports are submitted to satisfy the semi-annual reporting requirements of 40 CFR Part 63, Subpart EEE, the National Emission Standard for Hazardous Air Pollutants for Hazardous Waste Combustors (HWC NESHAP).

A.1 Facility Information	
Owner/Operator:	US Department of Defense/BAE Systems, Ordnance Systems, Inc.
Facility Location:	Radford Army Ammunition Plant (RFAAP)
Street Address:	Route 114 Radford, Virginia 24143-0100
Contact Information:	Mr. Jay Stewart Environmental Manager BAE Systems, Ordnance Systems, Inc. P.O. Box 1 Radford, Virginia 24143-0100 540.639.7785 jay.stewart@baesystems.com
Facility Classification:	Major stationary source of hazardous air pollutants (HAPs)

A.2 Applicability
Incinerator 441 is regulated under the Phase I standards of 40 CFR Part 63 Subpart EEE (HWC NESHAP), promulgated on October 12, 2005.

B. Identification of Each Hazardous Air Pollutant Monitored	
Hazardous Air Pollutant	**Type of Monitoring**
Dioxins/furans (D/F)	Continuous process monitoring
Mercury	Continuous process monitoring
Semivolatile metals (SVM) - lead and cadmium	Continuous process monitoring
Low volatile metals (LVM) - arsenic, beryllium, and chromium	Continuous process monitoring
Hydrogen chloride and chlorine (HCl/Cl_2)	Continuous process monitoring
Other metallic HAPs (using particulate matter as a surrogate)	Continuous process monitoring
Other organic HAPs (using carbon monoxide, hydrocarbons, and destruction and removal efficiency as surrogates)	Continuous process monitoring and continuous emissions monitoring systems (CEMS)

C. Reporting Period			
Start:	1 July 2012	End:	31 December 2012

D. Source Information	
Affected Source:	Incinerator 441
Air Pollution Control:	Fabric filter baghouse, gas pre-cooler, and packed bed scrubber

E.1. Applicable Emission Standards

Regulatory Citation	Hazardous Air Pollutant	Emission Standard
40 CFR § 63.1219(a)(1)(ii)	Dioxins/furans (D/F)	0.40 ng TEQ/dscm [1]
40 CFR § 63.1219(a)(2)	Mercury	130 μg/dscm [1]
40 CFR § 63.1219(a)(3)	Semivolatile metals (SVM) - lead and cadmium	230 μg/dscm [1]
40 CFR § 63.1219(a)(4)	Low volatile metals (LVM) - arsenic, beryllium, and chromium	92 μg/dscm [1]
40 CFR § 63.1219(a)(6)	Hydrogen chloride and chlorine (HCl/Cl_2)	32 ppmv, combined, expressed as Cl, dry basis [1]
40 CFR § 63.1219(a)(7)	Particulate matter (PM)	0.013 gr/dscf [1]
40 CFR § 63.1219(a)(5)(i)	Carbon monoxide (CO)	100 ppmv, 1-hour rolling average, dry basis [1]
40 CFR § 63.1219(a)(5)(ii)	Hydrocarbons (HC)	10 ppmv, 1-hour rolling average, dry basis [1]
40 CFR § 63.1219(c)(1)	Destruction and removal efficiency	99.99 percent

[1] Corrected to seven percent oxygen

E.2. Operating Parameter Limits

In accordance with 40 CFR § 63.1209, RFAAP has established the following operating parameter limits (OPLs) to demonstrate continuous compliance with the emission standards of the HWC NESHAP. These OPLs were established during the most recent comprehensive performance test (CPT) and were documented in RFAAP's Notification of Compliance (NOC) dated June 18, 2012.

Operating Parameter	Limit	Averaging Period [1]	Applicable Standards
Minimum kiln exit temperature	1306°F	HRA	HC, DRE, D/F
Minimum afterburner temperature	1605°F	HRA	HC, DRE, D/F
Maximum stack CO concentration [2]	100 ppmv, corrected to 7% oxygen	HRA	HC, DRE
Maximum total hazardous waste feed rate	2,061 lb/hr	HRA	HC, DRE, D/F
Maximum mercury feed rate [3]	0.00040 lb/hr	12-hr RA	Mercury
Maximum ash feed rate	48 lb/hr	12-hr RA	PM
Maximum semivolatile metals feed rate	6.4 lb/hr	12-hr RA	SVM
Maximum low volatile metals feed rate	1.7 lb/hr	12-hr RA	LVM
Maximum chlorine feed rate	19 lb/hr	12-hr RA	SVM, LVM, HCl/Cl_2

E.2. Operating Parameter Limits (continued)			
Operating Parameter	**Limit**	**Averaging Period [1]**	**Applicable Standards**
Maximum baghouse inlet temperature	356°F	HRA	D/F, LVM, SVM
Minimum wet scrubber pressure drop [4]	0.15 in. w.c.	HRA	HCl/Cl_2
Minimum neutralization tank pH	6.8	HRA	HCl/Cl_2
Minimum total scrubber system liquid flow rate	70 gpm	HRA	HCl/Cl_2
Minimum flue gas velocity [3]	20 ft/sec	HRA	Mercury
Maximum flue gas velocity	50 ft/sec	HRA	HC, DRE, D/F, PM, SVM, LVM, HCl/Cl_2
Maximum kiln pressure	Below atmospheric	Instantaneous with 10-second delay	Fugitive emissions

1 HRA refers to hourly rolling average. 12-hr RA refers to 12-hour rolling average.

2 RFAAP monitors the stack CO concentration as an indicator of proper operation of the waste firing system.

3 Together, these two OPLs demonstrate that the mercury theoretical emission concentration is always less than the emission standard of 130 µg/dscm, corrected to 7% oxygen.

4 This limit is based on manufacturer's recommendations, design specifications, or HWC NESHAP requirements rather than CPT demonstrations.

F and G. Monitoring Equipment				
Description	**Instrument Type**	**Manufacturer**	**Model**	**Audit Date**
Total hazardous waste feed rate	Coriolis flow meter	Micro Motion	DL-100	Jan 2013
Mercury feed rate				
Ash feed rate				
Semivolatile metals feed rate				
Low volatile metals feed rate				
Chlorine feed rate				
Kiln exit temperature	Thermocouple	Chromel-Alumel	Type K	Jan 2013
Afterburner temperature	Thermocouple	Chromel-Alumel	Type K	Jan 2013
Stack CO concentration	CO analyzer	Siemens	Ultramat 6E	Dec 2012
Baghouse inlet temperature	Thermocouple	Iron Constantan	Type J	Jan 2013
Wet scrubber pressure drop	Pressure transmitter	Taylor	504T	Jan 2013
Neutralization tank pH	pH analyzer	Foxboro	870 IT	Jan 2013
Total scrubber system liquid flow rate	Magnetic flow meter	Brooks	7400	Aug 2012
Flue gas velocity	Annubar flow meter	Dietrich Standard	Diamond II	Jan 2013
Kiln pressure	Pressure transmitter	Rosemount	1151 DP	Jan 2013

H. Operating Time		
Total operating time of affected source during the reporting period:	1513	hours
I. Emission Data Summary		
Total duration of excess emissions/parameter exceedances:	1.8	hours
Percent of total source operating time during which excess emissions/parameter exceedances occurred: [1]	0.12	%
Summary of causes of excess emissions/parameter exceedances:		
Startup/shutdown/malfunction	71	%
Control equipment problems	0	%
Process problems	25	%
Other known causes	4	%
Other unknown causes	0	%

[1] The duration shown represents the summed duration of each excess emission and OPL exceedance documented on the incinerator. The OPL exceedances may indicate but do not firmly guarantee that an emissions exceedance occurred.

J. Continuous Monitoring Systems (CMS) Performance Summary		
Total duration of CMS downtime:	21.1	hours
Percent of total source operating time during which CMS were down:	1.39	%
Summary of causes of CMS downtime:		
Monitoring equipment malfunctions	100	%
Non-monitoring equipment malfunctions	0	%
Quality assurance/quality control calibrations	0	%
Other known causes	0	%
Other unknown causes	0	%

K. Changes in Continuous Monitoring Systems, Processes, or Controls		
Any changes in CMS, processes, or controls since the last reporting period?	☒ Yes	☐ No

If yes, describe changes:

1. The Honeywell/L&N pH analyzer referenced in prior reports was replaced in 2010 with a Foxboro pH analyzer with similar performance specifications. This report reflects the current instrumentation that is installed.

2. On 9 Sep 2012, the oxygen analyzer on Incinerator 441 failed. As Incinerator 440 was down at the time, the analyzer from Incinerator 440 was removed and installed in the Incinerator 441 system. Prior to commencing waste feed, an absolute calibration audit (ACA) was performed to ensure proper installation of the analyzer. After the broken oxygen analyzer was repaired, it was installed in the Incinerator 440 system. Per a prior agreement with VDEQ, a relative accuracy test audit (RATA) was performed on the Incinerator 440 installation prior to commencing waste feed.

L. Report Applicability		
Is the total duration of excess emissions or process or control system parameter exceedances for the reporting period 1 percent or greater of the total operating time for the reporting period?	☐ Yes	☒ No
Is the total CMS downtime for the reporting period 5 percent or greater of the total operating time for the reporting period?	☐ Yes	☒ No

L. Report Applicability (continued)

Pursuant to 40 CFR 63.10(e)(3)(viii), if you answered "Yes" to either of the questions above, the additional reporting information specified in 40 CFR 63.10(e)(3)(v) must be provided along with this Summary Report. Otherwise, only the Summary Report is required.

M. Actions Taken During Startups, Shutdowns, and Malfunctions

In accordance with 40 CFR § 63.1206(c)(2), RFAAP has prepared and at all times operates according to a startup, shutdown, and malfunction (SSM) plan as specified in 40 CFR § 63.6(e)(3). During the reporting period, all actions taken during SSM periods were consistent with the procedures specified in the SSM plan, except as noted below.

Event Date	Description	Date Reported to DEQ	Follow-up Actions
31 Jul 2012	An event occurred that was not previously included in the source SSM plan and that resulted in potential excess emissions. The solenoid valve on the 441 slurry line flush failed and caused a positive pressure excursion.	Verbal: 2 Aug 2012 Written: 8 Aug 2012	Valve was tested extensively to verify proper actuation. The SSM plan was modified to include this malfunction scenario and appropriate corrective actions.

N. Malfunctions

The following malfunctions occurred during the reporting period and may have caused an applicable HWC NESHAP emission standard to be exceeded.

Description of Malfunction and Corrective Actions	Duration (min)	Occurrences
A power failure caused kiln and afterburner temperature excursions, and high carbon monoxide emissions. Power was restored and the unit was brought back to normal operations.	16	1
The baghouse inlet thermocouple failed and caused erroneous temperature readings and a baghouse bypass. The sudden shutoff of waste that resulted caused a combustion upset that led to high carbon monoxide emissions.	20	1
The stack flow meter failed and caused erroneous stack gas velocity readings. These readings, which appeared to be biased low, caused a waste feed cutoff and an exceedance of the minimum stack gas velocity limit. The annubar was removed, serviced, reinstalled in the system, and recalibrated before being placed back into service. The total duration is counted as the period of time that the erroneous readings are evident in the operating log. The actual parameter limit exceedance was only a small fraction of this time (21 minutes).	1224	2
The solenoid valve on the slurry line flush failed and caused a positive pressure excursion.	2	1
The delasco pump liner burst, causing a combustion upset that led to a sudden temperature fluctuation and a momentary baghouse bypass. All operating parameter limits and monitored emissions remained within limits, and the baghouse leak detector alarm did not sound. The liner was replaced, the unit was brought back online, and feed was resumed.	1	1
The stack oxygen monitor failed and prevented accurate measurement of the stack oxygen concentration and correction of the stack carbon monoxide concentration. The monitor was removed, serviced, and reinstalled in the Incinerator 440 system. A RATA was performed before it was placed back in service. The monitor from the Incinerator 440 system was installed on Incinerator 441 and an ACA was performed before it was placed in service.	20	1

Attachment 3.c

Copies of Previously Submitted Prompt Deviation Reports

- ***09-12-2012 Notification of Excess Emissions from the Acid Storage Area***
- ***10-09-2012 Notification of Piccolo Scrubber Deviation at the Nitrocellulose Process***
- ***10-26-2012 Notification of Powerhouse Excess Opacity Deviation***
- ***11-13-2012 Notification of Powerhouse Excess Opacity Deviation***

ORDNANCE SYSTEMS INC.
4050 Peppers Ferry Road, Route 114
Radford, VA 24141
Mail: P.O. Box 1, Radford, VA 24143
Telephone (540) 639-7323

2 October 2012

Ms. Mary Monroe, Air Compliance Engineer
Blue Ridge Regional Office
Virginia Department of Environmental Quality
3019 Peters Creek Road
Roanoke, VA 24019

RE: 12 September 2012 excess emissions report for Radford Army Ammunition Plant, Radford, Virginia
Nitrocellulose Area Permit VA20656 -AFS Identification Number: 51-121-0006

Dear Ms. Monroe:

BAE Systems Ordnance Systems Inc. (OSI), operating contractor for Radford Army Ammunition Plant (RFAAP) respectfully submits the attached Title V Prompt Deviation Reporting Form (Revised 12/6/07). The incident described took place on 12 September 2012 from the acid storage area. Due to inadequate communications between the transfer, mixing, and unloading operations emissions were observed above 20%. The emissions were reported to occur for approximately one hour before the hydrogen peroxide system could adequately control the opacity. OSI and the Army reported these emissions at approximately 2:30 PM to be conservative. In the future a method 9 visible emissions evaluation will be performed to document that excess emissions have occurred. Attached is a Title V Prompt Deviation Reporting Form (Revised 12/6/07) for Title V permit Condition X.A.7 which limits visible emissions to 20%.

If you have any questions or comments please contact Jay Stewart, OSI Environmental Manager at 540-639-7785 (jay.stewart@baesystems.com).

Respectfully,

[ORIGINAL SIGNED COPY WAS SUBMITTED TO VDEQ AS FOLLOW-UP PER PERMIT REQURIEMENTS]

T. D. Hayes
Director, Manufacturing and Facilities Support

Coordination with RFAAP Staff: _____
Len DiIoia, Jr.

Enclosure: Title V Prompt Deviation Reporting Form (Revised 12/6/07)
Additional Certification Document

cc: RFAAP ACO Staff/ DiIoia
File

ORDNANCE SYSTEMS INC.
4050 Peppers Ferry Road, Route 114
Radford, VA 24141
Mail: P.O. Box 1, Radford, VA 24143
Telephone (540) 639-7323

Certification of 2 October 2012 submission to Mary Monroe with Virginia Department of Environmental Quality of the Title V Prompt Deviation Reporting Form (Revised 12/6/07) for Title V permit Condition X.A.7 which limits visible emissions to 20%.This form covers the deviation that occurred on 12 September 2012 in the acid storage area - Permit VA20656 - Radford Army Ammunition Plant, Radford, Virginia

DOCUMENT CERTIFICATION FORM

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

[ORIGINAL SIGNED COPY WAS SUBMITTED TO VDEQ AS FOLLOW-UP PER PERMIT REQURIEMENTS]

SIGNATURE: _____ DATE: _____
NAME: WM BYRON PENLAND REGISTRATION NUMBER: 20656
TITLE: LTC, COMMANDER ADDRESS: PO Box 1
COMPANY: U.S. ARMY Radford, VA 24143

SIGNATURE: _____ DATE: _____
NAME: Todd D. Hayes REGISTRATION NUMBER: 20656
TITLE: Director, Facility Support Services ADDRESS: PO Box 1
COMPANY: BAE Systems Ordnance Systems Inc. Radford, VA 24143
PHONE: (423) 578-6369
EMAIL: todd.hayes@baesystems.com

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

TITLE V PROMPT DEVIATION REPORTING FORM

This form may be submitted to report each deviation required to be reported in accordance with a Virginia DEQ Title V Permit. Any supporting information should be submitted as an attachment and listed below.

Date: **October 2, 2012**

To**: South Central Regional Office, Regional Director**

Source Name: **Radford Army Ammunition Plant** Registration Number: **20656**

Source Address: 4050 Peppers Ferry Road, Route 114 City: Radford State: VA Zip: 24141

This report satisfies our requirement for the written follow-up **Title V Prompt Deviation Report (PDR)** and confirms the deviation initially reported to the **South Central** Regional Office at approximately 02:30 PM on 9/12/2012. The deviation **WAS** initially reported within 4-hours. The details of the deviation are described below. This deviation may have caused excess emissions for more than one hour (consistent with specified averaging times) and was not related to a malfunction.

Please contact **Jay Stewart**, **OSI, Environmental Manager** at **540-639-7785**, ext. with questions or concerns regarding this report.

(Each Field Below Must Be Completed)

Title V Permit Date: **1/15/2004**	Title V Condition #: **X.A.7**	Brief description of permit condition: **Visible Emission limit of 20%**		
Start Date: **9/12/2012**	Start Time: **10:40 AM**	End Date: **12 September 2012**	End Time: **11:40 AM**	Duration of event: **1** hrs **0** minutes
Description of deviation: **A report from the area was received that there were visible emissions coming from**				
Description of monitoring requirements for affected unit(s): **It was monitored using a Method 22 (Condition X.B.1) because a Method 9 could not be performed in a timely manner.**				
Probable cause of deviation: **Poor communication of activites in the area which overwhelmed the control equipment before hydrogen peroxide could be added.**				
Corrective measures taken demonstrating timely & appropriate response: **The importance of communications have been reemphasized.**				
Preventative measures taken to minimize the probability of the deviation occurring in the future:				

Comments: This was reported based on a method 22. In the future a method 9 will be conducted to document a deviation. Communication is already required between unloading, mixing, and transfer operations however the importance of this communication has been reemphasized.

Attachments: None

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name of Responsible Official: **T. D. Hayes** Title: **OSI, Director, Manufacturing and Facilities Support**

[ORIGINAL SIGNED COPY WAS SUBMITTED TO VDEQ AS FOLLOW-UP PER PERMIT REQURIEMENTS]

(Signature) (Date)

ORDNANCE SYSTEMS INC.
4050 Peppers Ferry Road, Route 114
Radford, VA 24141
Mail: P.O. Box 1, Radford, VA 24143
Telephone (540) 639-7323

16 October 2012

Ms. Mary Monroe, Air Compliance Engineer
Blue Ridge Regional Office
Virginia Department of Environmental Quality
3019 Peters Creek Road
Roanoke, VA 24019

RE: 9-10 October 2012 Excess Emissions Report for Radford Army Ammunition Plant, Radford, Virginia (Permit VA-20656, AFS Identification Number: 51-121-0006)

Dear Ms. Monroe:

BAE Systems Ordnance Systems Inc. (OSI), operating contractor for Radford Army Ammunition Plant (RFAAP) respectfully submits this follow-up report to the incident involving a malfunction of the Selective Catalytic Reduction (SCR) process and the attached Title V Prompt Deviation Reporting Form (Revised 12/6/07). A malfunction of the SCR process resulted in conditions which may have resulted in maximum NOx emissions in excess of the 125 ppmv permit limit for more than one hour. The incident described took place on 9-10 October 2012 at the nitrocellulose area. OSI and the Army reported these emissions at approximately 10:45 AM on 10 October 2012.

This written statement has been prepared to satisfy the failure/malfunction reporting requirements in accordance with Title V permit Condition XIII.F. The attached Title V Prompt Deviation Reporting Form has been prepared to document a deviation from permit Condition VII.A.3 which requires that the residual NOx emissions from the storage tanks shall be controlled by the piccolo scrubber while the SCR unit is shut down.

The malfunction occurred at approximately 10:50 PM on 9 October 2012 when the ammonia feed to the SCR was lost due to a pressure drop in the line, causing the safety slug valve to shut. This incident was caused by a control valve malfunction within the ammonia feed regulation system at the acid area which resulted in slug flow, rather than continuous flow, of ammonia to the SCR. The corrective action taken was to adjust the set points for the control valve. The nitration process was shut down immediately upon discovery of the malfunction, and after a period of troubleshooting, the repair was completed and the process placed back into normal operation by approximately 5:00 PM on 10 October 2012.

During this malfunction, the continuous NOx monitor was taken offline during the one hour period of 11:00 PM – 12:00 AM on 9 October 2012 and the two hour period 3:00 to 5:00 AM on 10 October 2012 due to the operator's concern that concentrations above the maximum range of the instrument (i.e., 250 ppm) may damage the unit. Conservatively, as no NOx monitoring data are available for these time periods and concentrations above the permit limit of 125 ppmv were observed prior to shut down of the monitor, it is possible that NOx concentrations exceeded their hourly average for the periods described. During the SCR malfunction, the piccolo scrubber was in

operation during the periods from approximately: 11:00 PM – 12:00 AM on 9 October 2012, and 6:00 – 7:10 AM and 2:20 – 4:00 PM on 10 October 2012.

The attached Title V Prompt Deviation Reporting Form addresses the two hour period from 3:00 to 5:00 AM on 10 October 2012 during which time the SCR process was down, but the piccolo scrubber was not operated to control residual emissions from the storage tanks as required under Title V permit Condition VII.A.3. As noted previously, the continuous NOx monitor was also offline during this period, and based on concentrations observed prior to monitor shut down, it is possible that the hourly averages for this period exceeded the 125 ppmv permit limit. The operator did not start up the piccolo scrubber at the time under the assumption that because the nitration process had been offline for a prolonged period, operation of the piccolo scrubber was not needed. As a corrective action it has been reemphasized to the operators that regardless of how long the nitration process has been shut down, the piccolo scrubber is required to be in operation whenever the SCR is offline.

If you have any questions or comments please contact me at 540-639-7785 (jay.stewart@baesystems.com).

Respectfully,

Jay Stewart
Environmental Manager

Coordination with RFAAP Staff:

Len DiIoia, Jr.

Enclosure: Title V Prompt Deviation Reporting Form (Revised 12/6/07)
Additional Certification Document

cc: RFAAP ACO Staff/ DiIoia
File

BAE SYSTEMS

ORDNANCE SYSTEMS INC.
4050 Peppers Ferry Road, Route 114
Radford, VA 24141
Mail: P.O. Box 1, Radford, VA 24143
Telephone (540) 639-7323

This certification is for the malfunction and deviation written notifications for the event that occurred on 9-10 October 2012 in the nitrocellulose area – Title V Permit VA20656 - Radford Army Ammunition Plant, Radford, Virginia. This submission to Mary Monroe with Virginia Department of Environmental Quality of the Title V Prompt Deviation Reporting Form (Revised 12/6/07) and associated letter is to meet the requirements of permit conditions XIII.E and XIII.F. The prompt deviation report also addresses permit condition VII.A.3 which requires that the residual emissions from the storage tanks shall be controlled by the piccolo scrubber while the selective catalytic reduction unit is shut down.

DOCUMENT CERTIFICATION FORM

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE:
NAME: WM BYRON PENLAND
TITLE: LTC, COMMANDER
COMPANY: U.S. ARMY

DATE: 22 OCT 12
REGISTRATION NUMBER: 20656
ADDRESS: PO Box 1
Radford, VA 24143

SIGNATURE:
NAME: Todd D. Hayes
TITLE: Director, Facility Support Services
COMPANY: BAE Systems Ordnance Systems Inc.
PHONE: (423) 578-6369
EMAIL: todd.hayes@baesystems.com

DATE: 16 Oct 12
REGISTRATION NUMBER: 20656
ADDRESS: PO Box 1
Radford, VA 24143

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

TITLE V PROMPT DEVIATION REPORTING FORM

This form may be submitted to report each deviation required to be reported in accordance with a Virginia DEQ Title V Permit. Any supporting information should be submitted as an attachment and listed below.

Date: **October 16, 2012**

To: **West Central Regional Office, Regional Director**

Source Name: **Radford Army Ammunition Plant** Registration Number: **20656**

Source Address: 4050 Peppers Ferry Road, Route 114 City: Radford State: VA Zip: 24141

This report satisfies our requirement for the written follow-up **Title V Prompt Deviation Report (PDR)** and confirms the deviation initially reported to the **West Central** Regional Office at approximately 10:45 AM on 10/10/2012. The deviation **WAS** initially reported within 4-hours. The details of the deviation are described below. This deviation may have caused excess emissions for more than one hour (consistent with specified averaging times) and was not related to a malfunction.

Please contact **Jay Stewart, OSI, Environmental Manager** at **540-639-7785**, ext. with questions or concerns regarding this report.

(Each Field Below Must Be Completed)

Title V Permit Date: **12/1/2003**	Title V Condition #: **VII.A.3**	Brief description of permit condition: **Operation of piccolo scrubber during shutdown of the SCR process**		
Start Date: **10/10/2012**	Start Time: **3:00 PM**	End Date: **10/10/2012**	End Time: **05:00 PM**	Duration of event: **2 hrs 0 minutes**
Description of deviation: **During an SCR malfunction event, a two hour period occurred when both the SCR process was shut down and the piccolo scrubber was not brought online**				
Description of monitoring requirements for affected unit(s): **Title V permit Condition VII.A.3 states that "[in] the event of SCR unit malfunction… [r]esidual NOx emissions from the storage tanks shall be controlled by a horizontal piccolo scrubber."**				
Probable cause of deviation: **During an extended period of troubleshooting during the SCR malfunction, there was an operator misunderstanding that since the nitration process had been offline for an extended period beforehand, the piccolo scrubber did not need to be brought online.**				
Corrective measures taken demonstrating timely & appropriate response: **Prior to resolution of the SCR malfunction event of 10 October 2012, it was reemphasized to the operators that is is a requirement of the permit that the piccolo scrubber be in operation while the SCR process is shut down in order to control residual NOx emissions from the storage tanks.**				
Preventative measures taken to minimize the probability of the deviation occurring in the future:				

Comments:

Attachments: None

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name of Responsible Official: **T. D. Hayes** Title: **OSI, Director, Manufacturing and Facilities Support**

(Signature)

16 Oct 12
(Date)

BAE SYSTEMS

ORDNANCE SYSTEMS INC.
4050 Peppers Ferry Road, Route 114
Radford, VA 24141
Mail: P.O. Box 1, Radford, VA 24143
Telephone (540) 639-7323

6 November 2012

Ms. Mary Monroe, Air Compliance Engineer
Blue Ridge Regional Office
Virginia Department of Environmental Quality
3019 Peters Creek Road
Roanoke, VA 24019

RE: 26 October 2012 Powerhouse Excess Opacity, Radford Army Ammunition Plant, Radford, Virginia (Permit VA-20656, AFS Identification Number: 51-121-0006)

Dear Ms. Monroe:

BAE Systems Ordnance Systems Inc. (OSI), operating contractor for Radford Army Ammunition Plant (RFAAP) respectfully submits this notification of an incident of excess opacity at the powerhouse on 26 October 2012. A Title V Prompt Deviation Reporting Form (Revised 12/6/07) for this incident is attached. OSI and the Army reported these emissions at approximately 10:35 hours on 26 October 2012.

The attached Title V Prompt Deviation Reporting Form has been prepared to document a deviation from permit Condition III.A.5 which requires limits visible emissions to "20 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 60 percent opacity." From 02:01 to 02:19 hours on 26 October 2012, opacity exceeded the 60 percent limit. However, opacity did not exceed 20 percent for greater than one hour. This report is based on data from the Continuous Opacity Monitor (COM) rather than visual evaluation since this event occurred in the overnight hours.

At approximately 02:00 hours on 26 October 2012, the powerhouse experienced an unexpected instantaneous doubling in steam demand. In order to keep up with demand and prevent the turbines from going offline, the injection of fuel oil into the combustion chambers was required, and a request was immediately made to the nitrocellulose area to curtail their steam usage. Opacity exceeded 60 percent between 02:01 to 02:19 hours, with a maximum observed 6-minute average of 89.6 percent during this time. Upon being requested to curtail their steam demand, the nitrocellulose area shut down a boiling tub and five poaching tubs to reduce load on the powerhouse. Even though the nitrocellulose area had multiple poaching tubs in operation and had recently switched on heat to an area building, this load should not have been outside the range of steam utilization required during normal operations.

As no apparent malfunction has been identified as the root cause of this event, this incident is being reported as a deviation. However, an investigation to identify the causative factors behind the steam demand surge is ongoing by Facilities in order to prevent a reoccurrence of this incident in the future.

If you should have any questions or comments please contact MaryAnn Bogucki at 540-639-7688 or maryann.bogucki@baesystems.com.

Respectfully,

Jay Stewart
Environmental Manager

Coordination with RFAAP Staff:

Len DiIoia, Jr.

Enclosure: Title V Prompt Deviation Reporting Form (Revised 12/6/07)
Additional Certification Document

cc: RFAAP ACO Staff/ DiIoia
File

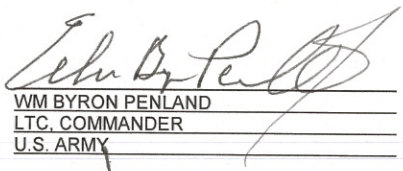
BAE SYSTEMS

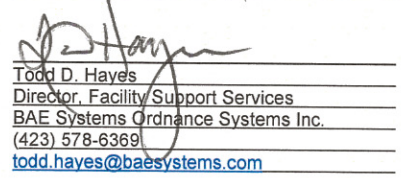
ORDNANCE SYSTEMS INC.
4050 Peppers Ferry Road, Route 114
Radford, VA 24141
Mail: P.O. Box 1, Radford, VA 24143
Telephone (540) 639-7323

Certification of 6 November 2012 submission to Mary Monroe with Virginia Department of Environmental Quality of Title V Prompt Deviation Reporting Form (Revised 12/6/07) for permit Condition III.A.5 which limits visible emissions to "20 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 60 percent opacity." This form covers the excess opacity event that occurred on 26 October 2012 at the powerhouse - Permit VA20656 - Radford Army Ammunition Plant, Radford, Virginia.

DOCUMENT CERTIFICATION FORM

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE: 
NAME: WM BYRON PENLAND
TITLE: LTC, COMMANDER
COMPANY: U.S. ARMY
DATE: 2 NOV 2012
REGISTRATION NUMBER: 20656
ADDRESS: PO Box 1
Radford, VA 24143

SIGNATURE: 
NAME: Todd D. Hayes
TITLE: Director, Facility Support Services
COMPANY: BAE Systems Ordnance Systems Inc.
PHONE: (423) 578-6369
EMAIL: todd.hayes@baesystems.com
DATE: 29 Oct 12
REGISTRATION NUMBER: 20656
ADDRESS: PO Box 1
Radford, VA 24143

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

TITLE V PROMPT DEVIATION REPORTING FORM

This form may be submitted to report each deviation required to be reported in accordance with a Virginia DEQ Title V Permit. Any supporting information should be submitted as an attachment and listed below.

Date: **November 6, 2012**

To: **West Central Regional Office, Regional Director**

Source Name: **Radford Army Ammunition Plant** Registration Number: **20656**

Source Address: 4050 Peppers Ferry Road, Route 114 City: Radford State: VA Zip: 24141

This report satisfies our requirement for the written follow-up **Title V Prompt Deviation Report (PDR)** and confirms the deviation initially reported to the **West Central** Regional Office at approximately 10:35 AM on 10/26/2012. The deviation **WAS** initially reported within 4-hours. The details of the deviation are described below. This deviation may have caused excess emissions for more than one hour (consistent with specified averaging times) and was not related to a malfunction.

Please contact **Jay Stewart, OSI, Environmental Manager** at **540-639-7785**, ext. with questions or concerns regarding this report.

(Each Field Below Must Be Completed)

Title V Permit Date: **12/1/2003**	Title V Condition #: **III.A.5**	Brief description of permit condition: **Limitation of excess opacity**		
Start Date: **10/26/2012**	Start Time: **02:01 AM**	End Date: **10/26/2012**	End Time: **02:19 PM**	Duration of event: **0** hrs **19** minutes
Description of deviation: **An unexpected instaneous doubling in steam demand required the injection of fuel oil into the combustion chambers in order to prevent the turbines from going offline. This use of fuel oil to maintain the steam supply resulted in an instance of excess opacity. As this event occurred in the overnight hours, the report is based on the continuous opacity monitor (COM) data rather than visual evaluation. Opacity exceeded 60% for a 19 minute period during this event; however, opacity did not exceed 20 percent for an hour.**				
Description of monitoring requirements for affected unit(s): **Title V permit Condition III.A.5 states that "visible emissions from each of the boiler stacks shall not exceed 20 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 60 percent opacity."**				
Probable cause of deviation: **Unexpected doubling in steam demand required the injection of fuel oil, which resulted in excess opacity.**				
Corrective measures taken demonstrating timely & appropriate response: **Upon observing the surge in demand, the powerhouse immediately contacted the nitrocellulose area to request that they curtail their steam demand. The nitrocellulose area responded by shutting down a boiling tub and five poaching tubs in order to reduce load on the powerhouse.**				
Preventative measures taken to minimize the probability of the deviation occurring in the future: **While the nitrocellulose area was curently running processes with high steam utilization and had also switched on building heat at the time, this load was not outside of the requirements for normal operations. An investigation into the causative factors behind the demand surge is ongoing by Facilities.**				

Comments:

Attachments: None

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name of Responsible Official: **T. D. Hayes** Title: **OSI, Director, Manufacturing and Facilities Support**

(Signature)

29 Oct 12
(Date)

BAE SYSTEMS

ORDNANCE SYSTEMS INC.
4050 Peppers Ferry Road, Route 114
Radford, VA 24141
Mail: P.O. Box 1, Radford, VA 24143
Telephone (540) 639-7323

20 November 2012

Ms. Mary Monroe, Air Compliance Engineer
Blue Ridge Regional Office
Virginia Department of Environmental Quality
3019 Peters Creek Road
Roanoke, VA 24019

RE: 13 November 2012 Powerhouse Excess Opacity, Radford Army Ammunition Plant, Radford, Virginia (Permit VA-20656, AFS Identification Number: 51-121-0006)

Dear Ms. Monroe:

BAE Systems Ordnance Systems Inc. (OSI), operating contractor for Radford Army Ammunition Plant (RFAAP) respectfully submits this notification of an incident of excess opacity at the powerhouse on 13 November 2012. A Title V Prompt Deviation Reporting Form (Revised 12/6/07) for this incident is attached. OSI and the Army reported these emissions at approximately 11:35 hours on 13 November 2012.

The attached Title V Prompt Deviation Reporting Form has been prepared to document a deviation from permit Condition III.A.5 which limits visible emissions to "20 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 60 percent opacity." For the minutes of 00:11 to 00:12 hours on 13 November 2012, the six-minute rolling averages exceeded the 60 percent opacity limit, at 60.4 and 60.7 percent, respectively. However, opacity did not exceed 20 percent for greater than one hour; the six minute rolling average exceeded 20 percent opacity for the period from 00:01 through 00:24 hours. This report is based on data from the Continuous Opacity Monitor (COM) rather than visual evaluation since this event occurred in the overnight hours.

At approximately 00:00 hours, the powerhouse experienced a sudden load increase that required fuel oil co-firing to restore steam pressure. Although the shift foreman contacted the production area to determine the reason for the steam demand surge, there were no activities that were identified as potential causes of the demand increase. A review of the steam meter data trends also did not indicate any apparent cause of the increase. After approximately 30 minutes, steam demand had declined to the extent that the powerhouse operators were able to reduce fuel oil gun usage. At the time of this event, two of the four boilers were out of service due to water tube leaks. Although the Utilities department has not been able to identify a direct cause of the steam demand surge, coordination efforts have been undertaken with the areas and instrument technicians have reduced the set-points at buildings to reduce demand at times when steam loads are excessive. As no apparent malfunction has been identified as the root cause of this event, this incident is being reported as a deviation.

BAE SYSTEMS

If you should have any questions or comments please contact MaryAnn Bogucki at 540-639-7688 or maryann.bogucki@baesystems.com.

Respectfully,

Jay Stewart
Environmental Manager

Coordination with RFAAP Staff:

Len Diloia, Jr.

Enclosure: Title V Prompt Deviation Reporting Form (Revised 12/6/07)
Additional Certification Document

cc: RFAAP ACO Staff/ DiIoia
File

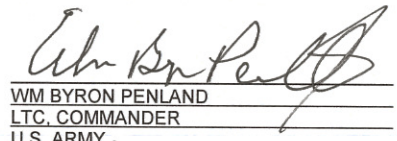
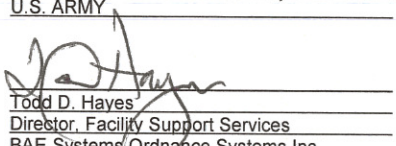
BAE SYSTEMS

ORDNANCE SYSTEMS INC.
4050 Peppers Ferry Road, Route 114
Radford, VA 24141
Mail: P.O. Box 1, Radford, VA 24143
Telephone (540) 639-7323

Certification of 20 November 2012 submission to Mary Monroe with Virginia Department of Environmental Quality of Title V Prompt Deviation Reporting Form (Revised 12/6/07) for permit Condition III.A.5 which limits visible emissions to "20 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 60 percent opacity." This form covers the excess opacity event that occurred on 13 November 2012 at the powerhouse - Permit VA20656 - Radford Army Ammunition Plant, Radford, Virginia.

DOCUMENT CERTIFICATION FORM

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE:		DATE:	16 NOV 2012
NAME:	WM BYRON PENLAND	REGISTRATION NUMBER:	20656
TITLE:	LTC, COMMANDER	ADDRESS:	PO Box 1
COMPANY:	U.S. ARMY		Radford, VA 24143
SIGNATURE:		DATE:	15 Nov '12
NAME:	Todd D. Hayes	REGISTRATION NUMBER:	20656
TITLE:	Director, Facility Support Services	ADDRESS:	PO Box 1
COMPANY:	BAE Systems Ordnance Systems Inc.		Radford, VA 24143
PHONE:	(423) 578-6369		
EMAIL:	todd.hayes@baesystems.com		

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

TITLE V PROMPT DEVIATION REPORTING FORM

This form may be submitted to report each deviation required to be reported in accordance with a Virginia DEQ Title V Permit. Any supporting information should be submitted as an attachment and listed below.

Date: **November 20, 2012**

To: **West Central Regional Office, Regional Director**

Source Name: **Radford Army Ammunition Plant** Registration Number: **20656**

Source Address: 4050 Peppers Ferry Road, Route 114 City: Radford State: VA Zip: 24141

This report satisfies our requirement for the written follow-up **Title V Prompt Deviation Report (PDR)** and confirms the deviation initially reported to the **West Central** Regional Office at approximately 11:35 AM on 11/13/2012. The deviation **WAS** initially reported within 4-hours. The details of the deviation are described below. This deviation may have caused excess emissions for more than one hour (consistent with specified averaging times) and was not related to a malfunction.

Please contact **Jay Stewart, OSI, Environmental Manager** at **540-639-7785**, ext. with questions or concerns regarding this report.

(Each Field Below Must Be Completed)

Title V Permit Date: **12/1/2003**	Title V Condition #: **III.A.5**	Brief description of permit condition: **Limitation of excess opacity**		
Start Date: **11/13/2012**	Start Time: **12:11 AM**	End Date: **11/13/2012**	End Time: **12:12 PM**	Duration of event: **0** hrs **2** minutes
Description of deviation: **An unexpected instaneous increase in steam demand required the injection of fuel oil into the combustion chambers in order to restore steam pressure. This use of fuel oil to maintain the steam supply resulted in an instance of excess opacity. As this event occurred in the overnight hours, the report is based on the continuous opacity monitor (COM) data rather than visual evaluation. The six-minute rolling average for opacity exceeded 60% for two consecutive minute periods during this event; however, opacity did not exceed 20 percent for an hour.**				
Description of monitoring requirements for affected unit(s): **Title V permit Condition III.A.5 states that "visible emissions from each of the boiler stacks shall not exceed 20 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 60 percent opacity."**				
Probable cause of deviation: **An increase in demand required the use of the fuel oil guns in order to restore steam pressure. No activities outside of normal operations were identified that could have caused the sudden load increase. At the time of this incident, two of the four boilers were out of service for repair of water tube leaks.**				
Corrective measures taken demonstrating timely & appropriate response: **The shift foreman contacted the production area to determine the reason for the steam demand surge; however, there were no activities that were identified as potential causes of the demand increase.**				
Preventative measures taken to minimize the probability of the deviation occurring in the future: **Although the Utilities department has not been able to identify a direct cause of the steam demand surge, coordination efforts have been undertaken with the areas and instrument technicians have reduced the set-points at buildings to reduce demand at times when steam loads are excessive.**				

Comments:

Attachments: None

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name of Responsible Official: **T. D. Hayes** Title: **OSI, Director, Manufacturing and Facilities Support**

(Signature)

15 Nov '12
(Date)

Attachment 3.d

Copies of Previously Submitted Malfunction Follow-Up Reports

- ***07-02-2012 Fume-off and Excess NOx Emissions at the Nitrocellulose Process***
- ***07-09-2012 Notification of SCR Malfunction at the Nitrocellulose Process***
- ***07-29-2012 Notification of Powerhouse COMS Malfunction***
- ***07-31-2012 Notification of 441Explosive Waste Incinerator Malfunction***
- ***08-03-2012 Notification of 440 Explosive Waste Incinerator ESV Opening***
- ***08-16-2012 Notification of SCR Malfunction at the Nitrocellulose Process***
- ***10-09-2012 Notification of SCR Malfunction at the Nitrocellulose Process***
- ***11-08-2012 Notification of Powerhouse Excess Opacity Malfunction (November 8 and 9)***
- ***11-26-2012 Notification of Powerhouse Excess Opacity Malfunction***
- ***12-05-2012 Notification of Powerhouse Excess Opacity Malfunction (December 5 and 7)***
- ***12-20-2012 Notification of Powerhouse Excess Opacity Malfunction***
- ***12-29-2012 Notification of Powerhouse Excess Opacity Malfunction***

6 July 2012

Ms. Mary Monroe, Air Compliance Engineer
Blue Ridge Regional Office
3019 Peters Creek Road
Roanoke, VA 24019

RE: Malfunction Report for Radford Army Ammunition Plant, Radford, Virginia Nitrocellulose Area, Permit VA20656 -AFS Identification Number: 51-121-0006

Dear Ms. Monroe:

BAE Systems Ordnance Systems Inc. (OSI), operating contractor for Radford Army Ammunition Plant (RFAAP), took over operation of RFAAP at midnight on 1 July 2012. The Nitrocellulose Nitration building operations were down, along with the primary control due to a storm event that occurred on 29 June 2012. The Piccolo Scrubber was in operation as required by Permit VA20656 Condition VII A 3 to control emission from the Acid Tank Farm. Later that same day, at approximately 7:30 PM the acid tanks started heating up and emissions were observed from several tanks. At approximately 11:30 PM the Oleum tank began to fail. By the end of the day the National Response Center, Local Emergency Response personnel, Virginia DEM, and DEQ had been contacted. On 2 July 2012 a problem was identified with the control system that required the immediate shutdown of the Piccolo Scrubber. The cause of the incident is currently under investigation. The shutdown lasted approximately 3 hours and the unit operated until approximately3 AM on 3 July 2012 at which time the SCR and tray scrubber were brought online. Additional resources were brought in to address the situation including off-duty personnel who were brought in for prompt restart of the unit. However due to process control issues and a fan malfunction the SCR tripped back off at approximately 9 PM. The Piccolo scrubber automatically came online at this time. On 4 July 2012, after checks from instrument technicians, maintenance, and controls personnel, at approximately 2:15 PM the SCR and tray scrubber was brought online. The units are currently functioning normally and production will begin operations shortly.

If you have any questions or comments please contact Mr. Bob Winstead, Environmental Manager, at 540-639-7785 (bob.winstead@baesystems.com).

Respectfully,

Todd D. Hayes
Director, Facility Support Services

Coordination with RFAAP Staff:

Len DiIoia, Jr.

cc: RFAAP ACO Staff/ DiIoia
File

ORDNANCE SYSTEMS INC.
Radford Army Ammunition Plant
114 Pepper's Ferry Road
Radford, VA 24141
Telephone: 540-639-7785

12 July 2012

Ms. Mary Monroe, Air Compliance Engineer
Blue Ridge Regional Office
3019 Peters Creek Road
Roanoke, VA 24019

RE: 9 July 2012 Malfunction Report for Radford Army Ammunition Plant, Radford, Virginia Nitrocellulose Area, Permit VA20656 -AFS Identification Number: 51-121-0006

Dear Ms. Monroe:

BAE Systems Ordnance Systems Inc. (OSI), operating contractor for Radford Army Ammunition Plant (RFAAP), took over operation of RFAAP on 1 July 2012. On Monday 9 July, the Nitrocellulose Nitration building operations were not operational. The Installation was working on recovery operations from a release incident that took place over the night of 1-2 July in the nitrocellulose area. At approximately 3:05 pm, NC area personnel began cleaning out Tank C of the NC tank farm. This tank had NC fines in the bottom of it. These fines needed to be cleaned out prior to the restart of operations for safety reasons. While this is not an atypical situation for the spent acid storage tanks in the NC area, the amount of fines in the bottom of tank C was unusually large due to the length of time since the last cleanout. When operations personnel began following their procedure for washing NC fines out of the tank, the tank began to fume. Over the course of the next hour, the amount of fuming began to exceed the capacity of the SCR to control. At approximately 4:05 operations personnel switched from the SCR to the piccolo scrubber due to the inability of the SCR to control the fume off event. This was later determined to be an issue with the ammonia supply to the SCR. Despite the switch to the piccolo scrubber, excess emissions were observed from the piccolo stack for the next two hours. At approximately 6:35 pm, BAE Systems made the determination that excess emissions were continuing from the piccolo scrubber, resulting in excess emissions for more than one hour. We further determined that the excess emissions event had resulted at that time in excess emissions exceeding 10 pound of NOx compounds. At this point we made a call to the National Response Center to report the release event. High opacity emissions continued until dark, with the last observation at 9:45. By first light in the morning 10 July no excess emissions were observed.

During the course of the evening it was discovered that an issue had developed in the ammonia supply line to the SCR from the Acids area. This issue was repaired during the night of 9-10 July 2012. At 8:25 the SCR was brought back online. Another follow up action from this event is an assessment of the piccolo scrubber for future operations.

If you have any questions or comments please contact me at 540-639-7785 (bob.winstead@baesystems.com).

Respectfully,

R.E. Winstead
Environmental Manager

Coordination with RFAAP Staff:

Len Diloia, Jr.

cc: RFAAP ACO Staff/ Diloia
File

ORDNANCE SYSTEMS INC.
Radford Army Ammunition Plant
114 Pepper's Ferry Road
Radford, VA 24141
Telephone: 540-639-7785

14 August 2012

Ms. Mary Monroe, Air Compliance Engineer
Virginia Department of Environmental Quality
Blue Ridge Regional Office
3019 Peters Creek Road
Roanoke, VA 24019

RE: Written notification of powerhouse continuous opacity monitor malfunction at Radford Army Ammunition Plant, Radford, Virginia - Permit VA20656 -AFS Identification Number: 51-121-0006 pursuant to Condition XIII F from Permit VA20656

Dear Ms. Monroe:

BAE Systems Ordnance Systems Inc. (OSI), operating contractor for Radford Army Ammunition Plant (RFAAP) as of 1 July 2012, respectfully submits the following notification of a malfunction event occurring with the continuous opacity monitor (COM) at the coal fired powerhouse on 29 July 2012. The Virginia Department of Environmental Quality Division of Air Quality was contacted by phone on 30 July 2012 and voicemail messages were left with Frank Adams and Mary Monroe as initial notification. This letter completes the reporting requirement from Condition XIII F from Permit VA20656 for this event.

The RFAAP powerhouse currently uses the COM system as a process aid as well as credible data that the stack opacity is below 20% as required by Condition III A 5 from Permit VA20656. After a one week powerhouse shutdown for routine maintenance, Boiler #3 was restarted at approximately 3:10 AM on 29 July 2012. Only Boiler #3 has operated since 29 July 2012. At approximately 3:17 AM on 29 July 2012, the PHS1 stack's COM system opacity readings began going over 20% and remained high for approximately 14 hours. However, during the same 14 hour period the dedicated COM for the Boiler #3 electrostatic precipitator (ESP) that feeds into the duct for stack PHS1 was above 20% for only 12 six-minute averages.

This discrepancy led operators to suspect that the common stack COM was not reading correctly. An instrument technician was brought in and repairs were made to the air purge system for the monitor. Once this was repaired, the readings were reduced below 20%; however, it was still measuring approximately 8% higher than the COM for Boiler #3 ESP. An Ametek vendor technician was scheduled but could not get to the site until 7 August 2012. Readings noted on the monitor before removal of the COM unit for lens cleaning and calibrations were in the ballpark of 18.5% to 19.9% opacity. The opacity readings after the monitor was re-installed were 8.5% to 10.0%. The opacity monitor for Boiler #3 ESP was reading between 9.0% to 11%, opacity during this same timeframe. The Ametek technician made recommendations to OSI instrument technicians to prevent this from occurring again.

To qualify the actual opacity, seven Method 9 readings were conducted (two on 31 July, two on 1 August and one on 2, 5, and 6 August) as verification since the reliability of the COM system was in question. Only one six minute period from the Method 9 readings was above 20% opacity. All method 9 and COM system readings will be available for your review during inspection.

If you have any questions or comments please contact Bob Winstead, Environmental Manager, at 540-639-7785 or by email at bob.winstead@baesystems.com.

Respectfully,

[ORIGINAL SIGNED COPY WAS SUBMITTED TO VDEQ WITHIN 14 DAYS OF EVENT AS PER PERMIT REQURIEMENTS]

T. D. Hayes
Director, Manufacturing and Facilities Support

Coordination with RFAAP Staff: _____
Len DiIoia, Jr.

cc: RFAAP ACO Staff/ DiIoia
File

ORDNANCE SYSTEMS INC.
Radford Army Ammunition Plant
114 Pepper's Ferry Road
Radford, VA 24141
Telephone: 540-639-7785

8 August 2012

Ms. Mary Monroe, Air Compliance Engineer
Blue Ridge Regional Office
3019 Peters Creek Road
Roanoke, VA 24019

RE: Written notification of 441 hazardous waste combustor malfunction at Radford Army Ammunition Plant, Radford, Virginia - Permit VA20656 -AFS Identification Number: 51-121-0006 pursuant to 40 CFR § 63.6(e)(3)(iv) and 63.10(d)(5)(ii)

Dear Ms. Monroe:

BAE Systems Ordnance Systems Inc. (OSI), operating contractor for Radford Army Ammunition Plant (RFAAP) as of 1 July 2012, respectfully submits the following notification of a malfunction event occurring at the 441 hazardous waste combustor (HWC) on 31 July 2012. As you are aware, OSI operates two hazardous waste incinerators at RFAAP. These incinerators are subject to the National Emission Standards for Hazardous Air Pollutants for Hazardous Waste Combustors (HWC NESHAP) promulgated in Title 40 Code of Federal Regulations (CFR) Part 63 Subpart EEE.

OSI has developed a written startup, shutdown, and malfunction (SSM) plan for these incinerators pursuant to 40 CFR § 63.6(e)(3)(i). This SSM plan describes in detail the procedures for operating the incinerators during SSM periods, identifies a series of potential and credible malfunctions for the incinerators, and provides a program of corrective action for malfunctioning process, air pollution control, and monitoring equipment. The malfunctions included in the SSM plan were developed using operator experience and process knowledge on the incinerators.

In the event that OSI encounters an SSM scenario that is not consistent with the procedures specified in the SSM plan and an applicable emission standard or operating limit is exceeded, OSI must file an immediate SSM report pursuant to 40 CFR § 63.6(e)(3)(iv) and 63.10(d)(5)(ii). This letter serves to satisfy that reporting requirement for an event occurring on 31 July 2012. Verbal notification of this event was provided to the Department of Environmental Quality (DEQ) by OSI and RFAAP staff on 2 August 2012.

On 31 July 2012, at approximately 2150 hours, the incinerator operator shut off the waste feed to Incinerator 441 due to storms in the area, which is standard protocol. Following the feed shut off, the operator activated a water flush of the slurry line to flush any remaining waste slurry from the slurry feed line as required by the incinerator standard operating procedure (SOP). However, the solenoid valve that controls this flush sequence did not close properly and caused an extended flush of the line, resulting in an extensive amount of water being added to the kiln. This extended addition of the water flush resulted in a positive pressure spike in the kiln, with the pressure reaching a high of 0.0031 inches of water column on an instantaneous basis. This positive pressure excursion may have caused fugitive emissions from the kiln.

As the malfunction scenario identified above was not previously included in the incinerators' SSM plan, the actions taken during this event were considered to be inconsistent with the procedures provided for malfunction scenarios in the SSM plan. Following the event, OSI conducted an investigation of the malfunction and tried to determine the cause for the solenoid valve failure. No immediate cause was

identified, but a series of tests was conducted on the valve to help ensure that it actuates properly in the future. OSI will be modifying the incinerators' SSM plan to include a flush valve failure and to specify procedures that operators should take to respond to the failure when it occurs. These changes will be enacted as soon as possible.

If you have any questions or comments please contact Bob Winstead, Environmental Manager, at 540-639-7785 or by email at bob.winstead@baesystems.com.

Respectfully,

T. D. Hayes
Director, Manufacturing and Facilities Support

Coordination with RFAAP Staff:

Len DiIoia, Jr.

cc: RFAAP ACO Staff/ DiIoia
File

Virginia Department of Emergency Management

ORDNANCE SYSTEMS INC.
Radford Army Ammunition Plant
114 Pepper's Ferry Road
Radford, VA 24141
Telephone: 540-639-7785

9 August 2012

Ms. Mary Monroe, Air Compliance Engineer
Virginia Department of Environmental Quality
Blue Ridge Regional Office
3019 Peters Creek Road
Roanoke, VA 24019

RE: Written notification Emergency Safety Vent Opening on the 440 hazardous waste combustor at Radford Army Ammunition Plant, Radford, Virginia - Permit VA20656 -AFS Identification Number: 51-121-0006 pursuant to 40 CFR § 63.1206(c)(4)(iv)

Dear Ms. Monroe:

BAE Systems Ordnance Systems Inc. (OSI), operating contractor for Radford Army Ammunition Plant (RFAAP) as of 1 July 2012, respectfully submits the following notification of an emergency safety vent opening event occurring at the 440 hazardous waste combustor (HWC) on 3 August 2012. As you are aware, OSI operates two hazardous waste incinerators at RFAAP. These incinerators are subject to the National Emission Standards for Hazardous Air Pollutants for Hazardous Waste Combustors (HWC NESHAP) promulgated in Title 40 Code of Federal Regulations (CFR) Part 63 Subpart EEE.

Each of these incinerators is equipped with an "emergency safety vent" (ESV) that bypasses the baghouse in certain emergency scenarios. When the ESV is activated, emissions are routed around the baghouse and pass through the precooler and scrubber before exiting through the exhaust stack. This bypass is intended to protect the baghouse equipment from high temperature excursions that could burn or sinter the bags and low temperature excursions that could wet the bags and render them ineffective at filtering particulate based pollutants from the flue gas. While this bypass does reduce the system's effective particulate matter removal, some level of control is still provided by the scrubber.

Pursuant to 40 CFR § 63.1206(c)(4)(iv), OSI must submit a report to the Virginia Department of Environmental Quality (DEQ) each time that an ESV opening occurs as a result of an event other than a malfunction and that opening results in a suspected failure to meet the emission standards. Such an event occurred on Incinerator 440 on Friday, August 3, 2012. This letter serves to meet the reporting requirements of 40 CFR § 63.1206(c)(4)(iv).

The event in question resulted when the operators stopped waste feed to the incinerator to perform daily instrument checks and calibrations. The shut off of the waste feed caused a disruption to the combustion process and resulted in a significant temperature swing within the system that led to a bypass of the baghouse on the low temperature safety cutoff. The disruption also caused a momentary positive pressure excursion in the kiln and an exceedance of the carbon monoxide rolling average limit. Operators shut off waste feed per the normal protocol but were unable to respond quick enough to the sudden temperature fluctuation to prevent the bypass. As a result of this bypass, we suspect that emissions of several HWC NESHAP regulated pollutants may have temporarily increased. These pollutants include particulate matter (PM), semivolatile metals (SVM), and low volatile metals (LVM). However, because some additional control of these particulate based pollutants is provided by the downstream scrubber, we do not necessary believe that the HWC NESHAP emission standards for these pollutants were exceeded. The total duration of the ESV

opening and potential PM, SVM, and LVM emissions exceedance was 3 minutes and 49 seconds. The CO rolling average limit was above 100 parts per million by volume (ppmv) corrected to seven percent oxygen for approximately 1 hour and 23 minutes. However, waste was out of the system 20 minutes after the exceedance began.

Following this ESV opening, we commenced an investigation as required by 40 CFR § 63.1206(c)(4)(iii) to investigate the cause of the opening and help reduce future occurrences. We believe this instance was exacerbated by the operator overreacting to the temperature swing and employing multiple corrective actions simultaneously (instead of allowing the effect of one reaction to be realized before implementing another). To help reduce the chance of these events causing ESV openings in the future, we have reminded the operators to step down waste feed whenever possible to reduce the effect of the burnout and have reviewed the proper procedures for flushing the feed line after shutting off waste feed.

Based on the results of our investigation, we do not believe that changes to the SSM plan are necessary at this time. We will monitor the operators' handling of shut off scenarios and will implement additional corrective actions in the standard operating procedure or the operator training program if necessary.

If you have any questions or comments please contact Bob Winstead, Environmental Manager, at 540-639-7785 or by email at bob.winstead@baesystems.com.

Respectfully,

T. D. Hayes
Director, Manufacturing and Facilities Support

Coordination with RFAAP Staff: for
Len Diloia, Jr.

cc: RFAAP ACO Staff/ Diloia
File

Virginia Department of Emergency Management

ORDNANCE SYSTEMS INC.
Radford Army Ammunition Plant
114 Pepper's Ferry Road
Radford, VA 24141
Telephone: 540-639-7785

22 August 2012

Ms. Mary Monroe, Air Compliance Engineer
Blue Ridge Regional Office
3019 Peters Creek Road
Roanoke, VA 24019

RE: SCR Malfunction Report: 16, 17 August 2012
Radford Army Ammunition Plant, Radford, Virginia Nitrocellulose Area Permit VA20656 -AFS Identification Number: 51-121-0006

Dear Ms. Monroe:

At approximately 12:15 on 16 August 2012, the Selective Catalytic Reduction emission control unit at the Nitrocellulose area malfunctioned. Production was immediately stopped and technicians called to assess the situation. Emissions were switched to the piccolo scrubber. The problem was determined to be an ignition transformer on the SCR heater. A part was ordered and installed early Thursday morning and the SCR heater relit at approximately 8:30. The SCR was placed back online at 1:10 pm after the temperature reached nominal operational levels.

On Friday 17 August at approximately 1:00 the SCR again went offline due to a heater malfunction. Production was shut down and the system was again switched to the piccolo scrubber. The problem in this instance was quickly identified and corrected. The SCR was placed back online at 1:50 pm.

Please accept my thanks for your attention to this matter. Please contact me by phone or email if you have questions or comments regarding these events.

Respectfully,

R.E. Winstead
Environmental Manager

Coordination with RFAAP Staff:

Len Diloia, Jr.

cc: RFAAP ACO Staff/ Diloia
File

ORDNANCE SYSTEMS INC.
4050 Peppers Ferry Road, Route 114
Radford, VA 24141
Mail: P.O. Box 1, Radford, VA 24143
Telephone (540) 639-7323

16 October 2012

Ms. Mary Monroe, Air Compliance Engineer
Blue Ridge Regional Office
Virginia Department of Environmental Quality
3019 Peters Creek Road
Roanoke, VA 24019

RE: 9-10 October 2012 Excess Emissions Report for Radford Army Ammunition Plant, Radford, Virginia (Permit VA-20656, AFS Identification Number: 51-121-0006)

Dear Ms. Monroe:

BAE Systems Ordnance Systems Inc. (OSI), operating contractor for Radford Army Ammunition Plant (RFAAP) respectfully submits this follow-up report to the incident involving a malfunction of the Selective Catalytic Reduction (SCR) process and the attached Title V Prompt Deviation Reporting Form (Revised 12/6/07). A malfunction of the SCR process resulted in conditions which may have resulted in maximum NOx emissions in excess of the 125 ppmv permit limit for more than one hour. The incident described took place on 9-10 October 2012 at the nitrocellulose area. OSI and the Army reported these emissions at approximately 10:45 AM on 10 October 2012.

This written statement has been prepared to satisfy the failure/malfunction reporting requirements in accordance with Title V permit Condition XIII.F. The attached Title V Prompt Deviation Reporting Form has been prepared to document a deviation from permit Condition VII.A.3 which requires that the residual NOx emissions from the storage tanks shall be controlled by the piccolo scrubber while the SCR unit is shut down.

The malfunction occurred at approximately 10:50 PM on 9 October 2012 when the ammonia feed to the SCR was lost due to a pressure drop in the line, causing the safety slug valve to shut. This incident was caused by a control valve malfunction within the ammonia feed regulation system at the acid area which resulted in slug flow, rather than continuous flow, of ammonia to the SCR. The corrective action taken was to adjust the set points for the control valve. The nitration process was shut down immediately upon discovery of the malfunction, and after a period of troubleshooting, the repair was completed and the process placed back into normal operation by approximately 5:00 PM on 10 October 2012.

During this malfunction, the continuous NOx monitor was taken offline during the one hour period of 11:00 PM – 12:00 AM on 9 October 2012 and the two hour period 3:00 to 5:00 AM on 10 October 2012 due to the operator's concern that concentrations above the maximum range of the instrument (i.e., 250 ppm) may damage the unit. Conservatively, as no NOx monitoring data are available for these time periods and concentrations above the permit limit of 125 ppmv were observed prior to shut down of the monitor, it is possible that NOx concentrations exceeded their hourly average for the periods described. During the SCR malfunction, the piccolo scrubber was in

operation during the periods from approximately: 11:00 PM – 12:00 AM on 9 October 2012, and 6:00 – 7:10 AM and 2:20 – 4:00 PM on 10 October 2012.

The attached Title V Prompt Deviation Reporting Form addresses the two hour period from 3:00 to 5:00 AM on 10 October 2012 during which time the SCR process was down, but the piccolo scrubber was not operated to control residual emissions from the storage tanks as required under Title V permit Condition VII.A.3. As noted previously, the continuous NOx monitor was also offline during this period, and based on concentrations observed prior to monitor shut down, it is possible that the hourly averages for this period exceeded the 125 ppmv permit limit. The operator did not start up the piccolo scrubber at the time under the assumption that because the nitration process had been offline for a prolonged period, operation of the piccolo scrubber was not needed. As a corrective action it has been reemphasized to the operators that regardless of how long the nitration process has been shut down, the piccolo scrubber is required to be in operation whenever the SCR is offline.

If you have any questions or comments please contact me at 540-639-7785 (jay.stewart@baesystems.com).

Respectfully,

Jay Stewart
Environmental Manager

Coordination with RFAAP Staff:

Len DiIoia, Jr.

Enclosure: Title V Prompt Deviation Reporting Form (Revised 12/6/07)
Additional Certification Document

cc: RFAAP ACO Staff/ DiIoia
File

BAE SYSTEMS

ORDNANCE SYSTEMS INC.
4050 Peppers Ferry Road, Route 114
Radford, VA 24141
Mail: P.O. Box 1, Radford, VA 24143
Telephone (540) 639-7323

28 November 2012

Ms. Mary Monroe, Air Compliance Engineer
Blue Ridge Regional Office
Virginia Department of Environmental Quality
3019 Peters Creek Road
Roanoke, VA 24019

RE: 8 and 9 November 2012 Powerhouse Excess Opacity Events, Radford Army Ammunition Plant, Radford, Virginia (Permit VA-20656, AFS Identification Number: 51-121-0006)

Dear Ms. Monroe:

BAE Systems Ordnance Systems Inc. (OSI), operating contractor for Radford Army Ammunition Plant (RFAAP) respectfully submits this follow-up report regarding two unrelated incidents of excess opacity on 8 and 9 November 2012, resulting from malfunction events at the powerhouse. ***This letter has been revised from the version submitted to VDEQ on 20 November 2012 to correct a typographical error resulting in the wrong date being listed.*** OSI and the Army initially reported the first malfunction event at approximately 15:20 hours on 8 November 2012. The powerhouse opacity data was retrieved and evaluated on Monday, 12 November 2012, and upon review of the data from this incident, a second event of excess opacity was identified to have occurred at approximately 00:30 hours on Friday, 9 November 2012. VDEQ was notified of this additional incident at approximately 09:30 hours on 12 November 2012. This written statement has been prepared to satisfy the failure/malfunction reporting requirements in accordance with Title V permit Condition XIII.F.

Title V permit Condition III.A.5 limits visible emissions from the powerhouse boilers to "20 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 60 percent opacity." For the minutes of 15:07 through 15:08 hours on ***8 November 2012 (not 13 November 2012, as previously listed)***, the six-minute rolling averages exceeded the 60 percent opacity limit, at 64.9 and 62.8 percent, respectively. This report is based on data from the Continuous Opacity Monitor (COM) rather than visual evaluation due to the short duration of this event. However, opacity did not exceed 20 percent for greater than one hour; the six minute rolling average exceeded 20 percent opacity for the period from 15:03 through 15:14 hours. The cause of the excess opacity on the afternoon of 8 November 2012 was a malfunction resulting from a water tube break at Boiler 4. At approximately 15:00 hours, an operator observed water in the basement at the powerhouse and responded immediately. Several plant areas were requested to curtail their steam usage, and by 15:15 hours visible emissions had declined to below 20 percent opacity and were able to be managed below this limit through the duration of the repair work.

A second malfunction event occurred in the overnight hours of 9 November 2012 as a result of a faulty oil gun at Boiler 2. A review of the data indicates that opacity began to increase at approximately 00:32 hours, and remained intermittently above 20 percent until 03:42 hours. The

following table documents the periods of time during this event when the six minute rolling average exceeded 20 percent opacity.

Summary of Data from 9 November 2012 Oil Gun Malfunction at Boiler 2

Date	Time Period	Duration 6-min Rolling Average Opacity Value >20%	Maximum 6-min Rolling Average Opacity Value During Period
November 9, 2012	00:32 – 00:38 hours	7 minutes	33.7 percent
	00:42 – 00:47 hours	6 minutes	23.5 percent
	01:37 – 01:38 hours	2 minutes	20.5 percent
	01:40 hours	1 minute	20.5 percent
	01:53 hours	1 minute	20.6 percent
	02:01 – 02:32 hours	32 minutes	28.2 percent
	02:39 – 02:52 hours	14 minutes	22.3 percent
	02:54 – 03:12 hours	19 minutes	25.7 percent
	03:17 – 03:42 hours	26 minutes	40.5 percent

This report is based on data from the Continuous Opacity Monitor (COM) rather than visual evaluation since this event occurred in the overnight hours. Although opacity did not continuously exceed 20 percent for greater than one hour, between the time of 00:32 and 03:42 hours, 108 of the 191 six-minute rolling average opacity values exceeded 20 percent. The oil gun was replaced at Boiler 2, and opacity declined and remained below 20 percent as of 03:42 hours.

If you should have any questions or comments please contact MaryAnn Bogucki at 540-639-7688 or maryann.bogucki@baesystems.com.

Respectfully,

Jay Stewart
Environmental Manager

Coordination with RFAAP Staff:

Len DiIoia, Jr.

cc: RFAAP ACO Staff/ DiIoia
File

BAE SYSTEMS

ORDNANCE SYSTEMS INC.
4050 Peppers Ferry Road, Route 114
Radford, VA 24141
Mail: P.O. Box 1, Radford, VA 24143
Telephone (540) 639-7323

7 December 2012

Ms. Mary Monroe, Air Compliance Engineer
Blue Ridge Regional Office
Virginia Department of Environmental Quality
3019 Peters Creek Road
Roanoke, VA 24019

RE: 26 November 2012 Powerhouse Excess Opacity Event, Radford Army Ammunition Plant, Radford, Virginia (Permit VA-20656, AFS Identification Number: 51-121-0006)

Dear Ms. Monroe:

BAE Systems Ordnance Systems Inc. (OSI), operating contractor for Radford Army Ammunition Plant (RFAAP) respectfully submits this follow-up report regarding an incident of excess opacity on 26 November 2012 resulting from a malfunction event at the powerhouse. OSI and the Army reported the malfunction event to VDEQ at approximately 15:25 hours on 26 November 2012. This written statement has been prepared to satisfy the failure/malfunction reporting requirements in accordance with Title V permit Condition XIII.F.

Title V permit Condition III.A.5 limits visible emissions from the powerhouse boilers to "20 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 60 percent opacity." The duration of this opacity event was six minutes, as the six-minute block average for 1430 hours was 73.1 percent. This report is based on data from the Continuous Opacity Monitor (COM) rather than visual evaluation due to the short duration of this event. However, opacity did not exceed 20 percent for greater than one hour; the six minute block average exceeded 20 percent opacity for the period from 1418 through 1442 hours, a duration of 24 minutes. The cause of the excess opacity on the afternoon of 26 November 2012 was a malfunction resulting from the failure of water wall tube at Boiler 4 which extinguished the boiler flame. Boiler 5 was started-up from hot standby to replace the lost capacity during the repairs.

The data from this malfunction is being reported as 6-minute block averages rather than 6-minute rolling averages as done previously due to a server failure of the Active Factory system which resulted in data loss coinciding with this malfunction event. The continuous opacity data for the powerhouse is also retained on their local DAC system; however, the method of average calculated by this system uses a 6-minute block average rather than a rolling average. As per the meeting with VDEQ on 30 November 2012, all future reporting to VDEQ based on the COMS system will utilize the 6-minute block average.

If you should have any questions or comments please contact MaryAnn Bogucki at 540-639-7688 or maryann.bogucki@baesystems.com.

Respectfully,

Jay Stewart
Environmental Manager

Coordination with RFAAP Staff:

Len DiIoia, Jr.

cc: RFAAP ACO Staff/ DiIoia
File

BAE SYSTEMS

ORDNANCE SYSTEMS INC.
4050 Peppers Ferry Road, Route 114
Radford, VA 24141
Mail: P.O. Box 1, Radford, VA 24143
Telephone (540) 639-7323

19 December 2012

Ms. Mary Monroe, Air Compliance Engineer
Blue Ridge Regional Office
Virginia Department of Environmental Quality
3019 Peters Creek Road
Roanoke, VA 24019

RE: 5 and 7 December 2012 Powerhouse Excess Opacity Events, Radford Army Ammunition Plant, Radford, Virginia (Permit VA-20656, AFS Identification Number: 51-121-0006)

Dear Ms. Monroe:

BAE Systems Ordnance Systems Inc. (OSI), operating contractor for Radford Army Ammunition Plant (RFAAP) respectfully submits this follow-up report regarding two incidents of excess opacity which occurred on 5 and 7 December 2012 resulting from unrelated malfunction events at the powerhouse. OSI and the Army reported these malfunction events to VDEQ at approximately 09:00 hours on 6 December 2012, and 10:15 hours on 7 December 2012, respectively. This written statement has been prepared to satisfy the failure/malfunction reporting requirements in accordance with Title V permit Condition XIII.F.

Title V permit Condition III.A.5 limits visible emissions from the powerhouse boilers to "20 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 60 percent opacity." On 5 December 2012, Continuous Opacity Monitor (COM) data indicated that the opacity exceeded 60 percent for twelve minutes total (i.e., the 6-minute block averages for the periods of 16:06-16:12 and 16:12-16:18 hours were 76.8 and 68.1 percent, respectively). This report is based on data from the COM than visual evaluation due to the short duration of this event. The cause of the excess opacity on the afternoon of 5 December 2012 was a malfunction caused by a jam in the 3B coal feeder. Fuel oil was required to support header pressure while the 5B mill was put into service. Although the initial report to VDEQ indicated that the object which had caused the jam was a rock, further investigation indicated that it was in fact an oversized but elongated piece of coal which was able to pass through the 4"x4" screens in the grizzly, but was not able to subsequently pass through the feeder. A mechanic was called in to clear the jam, and the 3B feeder/mill was able to be restarted and the 5B mill shutdown.

A second malfunction event occurred between 02:42 and 04:12 hours on 7 December 2012. However, a subsequent review of the data indicates that the time above 20 percent opacity did not exceed an hour duration as initially reported. The 6-minute block average for opacity exceeded 20 percent intermittently (i.e., nine of the sixteen 6-minute average blocks) during the period from 02:42 and 04:12 hours. This report is based on data from the COM than visual evaluation since this event occurred in the overnight hours. The cause of the excess opacity on 7 December 2012 was a malfunction resulting from the failure of water wall tube at Boiler 3 which extinguished the boiler flame. In order to reduce steam demand while Boiler 3 was out of service for repair, steam to the nitrocellulose area was curtailed by approximately 50 percent. The following table documents the periods of time during this event when the six minute block average exceeded 20 percent opacity.

Summary of Data from 7 December 2012 Water Tube Malfunction at Boiler 3

Date	6-Minute Block	Duration 6-min Block Average Opacity Value >20%	6-min Block Average Opacity Value During Period
7 December 2012	2:42 hours	6 minutes	24.2 percent
	2:48 hours	---	8.3 percent
	2:54 hours	---	4.4 percent
	3:00 hours	---	4.8 percent
	3:06 hours	---	40.8 percent
	3:12 hours	12 minutes	47.0 percent
	3:18 hours	---	14.0 percent
	3:24 hours	---	9.3 percent
	3:30 hours	---	12.0 percent
	3:36 hours	---	7.9 percent
	3:42 hours	---	20.7 percent
	3:48 hours	---	26.2 percent
	3:54 hours	---	20.6 percent
	4:00 hours	---	27.6 percent
	4:06 hours	---	30.3 percent
	4:12 hours	36 minutes	38.7 percent

If you should have any questions or comments please contact MaryAnn Bogucki at 540-639-7688 or maryann.bogucki@baesystems.com.

Respectfully,

Jay Stewart
Environmental Manager

Coordination with RFAAP Staff:

Len Diloia, Jr.

cc: RFAAP ACO Staff/ DiIoia
File

BAE SYSTEMS

ORDNANCE SYSTEMS INC.
4050 Peppers Ferry Road, Route 114
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Telephone (540) 639-7323

4 January 2013

Ms. Mary Monroe, Air Compliance Engineer
Blue Ridge Regional Office
Virginia Department of Environmental Quality
3019 Peters Creek Road
Roanoke, VA 24019

RE: 20 December 2012 Powerhouse Excess Opacity Events, Radford Army Ammunition Plant, Radford, Virginia (Permit VA-20656, AFS Identification Number: 51-121-0006)

Dear Ms. Monroe:

BAE Systems Ordnance Systems Inc. (OSI), operating contractor for Radford Army Ammunition Plant (RFAAP) respectfully submits this follow-up report regarding an incident of excess opacity which occurred on 20 December 2012 resulting from a malfunction event at the powerhouse. OSI and the Army reported this malfunction event to VDEQ at approximately 10:45 hours on 21 December 2012. This written statement has been prepared to satisfy the failure/malfunction reporting requirements in accordance with Title V permit Condition XIII.F.

Title V permit Condition III.A.5 limits visible emissions from the powerhouse boilers to "20 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 60 percent opacity." On 20 December 2012, Continuous Opacity Monitor (COM) data indicated that the opacity exceeded 60 percent for twelve minutes total (i.e., the 6-minute block averages for the periods of 17:24-17:30 and 17:30-17:36 hours were 76.6 and 86.0 percent, respectively). This report is based on data from the COM than visual evaluation due to the short duration of this event and because it occurred in the evening.

The cause of the excess opacity event was a malfunction resulting from the failure of water wall tube at Boiler 3 which occurred at approximately 15:24 hours. In order to meet steam demand while Boiler 3 was taken out of service, Boiler 5 was brought online. However, while being brought online, mill slide gate valves and the feedwater regulator at Boiler 5 malfunctioned. During the time that the shift instrument technician was working to resolve these issues, there were six discrete spikes in opacity above 20 percent of various duration between 15:24 and 19:18 hours, inclusive of the spike that yielded opacity values in excess of 60 percent.

If you should have any questions or comments please contact MaryAnn Bogucki at 540-639-7688 or maryann.bogucki@baesystems.com.

Respectfully,

Jay Stewart
Environmental Manager

Coordination with RFAAP Staff:

Len DiIoia, Jr.

cc: RFAAP ACO Staff/ DiIoia
File

ORDNANCE SYSTEMS INC.
4050 Peppers Ferry Road, Route 114
Radford, VA 24141
Mail: P.O. Box 1, Radford, VA 24143
Telephone (540) 639-7323

4 January 2013

Ms. Mary Monroe, Air Compliance Engineer
Blue Ridge Regional Office
Virginia Department of Environmental Quality
3019 Peters Creek Road
Roanoke, VA 24019

RE: 29 December 2012 Powerhouse Excess Opacity Events, Radford Army Ammunition Plant, Radford, Virginia (Permit VA-20656, AFS Identification Number: 51-121-0006)

Dear Ms. Monroe:

BAE Systems Ordnance Systems Inc. (OSI), operating contractor for Radford Army Ammunition Plant (RFAAP) respectfully submits this follow-up report regarding an incident of excess opacity which occurred on 29 December 2012 resulting from a malfunction event at the powerhouse. OSI and the Army reported this malfunction event to VDEQ at approximately 09:15 hours on 2 January 2013. This written statement has been prepared to satisfy the failure/malfunction reporting requirements in accordance with Title V permit Condition XIII.F.

Title V permit Condition III.A.5 limits visible emissions from the powerhouse boilers to "20 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 60 percent opacity." On 29 December 2012, Continuous Opacity Monitor (COM) data indicated that the opacity exceeded 60 percent for six minutes total (i.e., the 6-minute block average for the period of 02:24-02:30 hours was 65.6 percent). This report is based on data from the COM because it occurred in the overnight hours. The cause of the excess opacity event was a malfunction resulting from the failure of water wall tube at Boiler 3; it was removed from service at this time to conduct the necessary repairs.

If you should have any questions or comments please contact MaryAnn Bogucki at 540-639-7688 or maryann.bogucki@baesystems.com.

Respectfully,

Jay Stewart
Environmental Manager

Coordination with RFAAP Staff:

Len DiIoia, Jr.

cc: RFAAP ACO Staff/ DiIoia
File

Attachment 4

Title V Annual Compliance Certificate (July 1 – December 31, 2012)
2H2012 Title V Semiannual Monitoring Report
for
Permit Condition VIII (Process Equipment Requirements – NRE: New River Energetics)
Prepared by ATK (21 February 2013)

February 21, 2013

Mr. Jay Stewart
Environment Manager
BAE Systems // Ordnance Systems Inc.
Radford Army Ammunition Plant
4050 Peppers Ferry Road
Radford, VA 24141

RE: Alliant Techsystems Operations LLC. Title V Compliance June 2012 to December 2012

Dear Mr. Stewart:

As you are aware, Alliant Techsystems Operations, LLC (NRE) has made several submittals to DEQ to request that DEQ undertake the process necessary to amend the Title V permit for the Radford Army Ammunition Plant ("RFAAP") to delete all the provisions of that permit governing New River Energetics ("NRE"). Because this has not been finalized yet, BAE requested during a meeting on February 19, 2013 information from NRE to support the reports due to DEQ no later than March 1, 2013.

Enclosed please find the three certifications that you requested:

1. Title V Semi-Annual Deviation report period July 1, 2012 to December 31, 2012;
2. Title V Compliance Certification period July 1, 2012 to December 31, 2012; and
3. Assurance that Alliant Techsystems Operations LLC is not operating any sources subject to the Miscellaneous Organic NESHAP (MON).

Please feel free to contact, Jeremy Flint (jeremy.flint@atk.com) at 540 831-4716 if you have questions or need additional information.

Sincerely,

Joseph Betteken

Joseph Betteken,
Safety/Environmental Manager
Alliant Techsystems Operations LLC.

Semi-Annual Deviation Report
Section VIII June 1, 2012 to December 31, 2012.

Alliant Techsystems Operations, LLC (a.k.a New River Energetics, a.k.a NRE) is submitting this notification to BAE Systems // Ordnance Systems Inc. the operating contractor for the Radford Army Ammunition Plant, pursuant to General Condition XIII.C.3 of the facility Title V permit. NRE is the operator responsible for Section VIII Process Equipment Requirements – NRE: New River Energetics of the Title V permit. NRE reports no deviations from permit requirements occurred during this semi-annual reporting period.

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name of Responsible Official (Print): M. Anthony Miano

Title: Operations Manager, Alliant Techsystems

Signature: M M Miano Date: 2/21/13

Annual Compliance Certification
Section VIII June 1, 2012 to December 31, 2012.

Alliant Techsystems Operations, LLC (a.k.a New River Energetics, a.k.a NRE) is submitting this notification to BAE Systems // Ordnance Systems Inc. the operating contractor for the Radford Army Ammunition Plant, pursuant to General Condition XIII.D of the facility Title V permit. NRE is the operator responsible for Section VIII Process Equipment Requirements – NRE: New River Energetics of the Title V permit. An annual Compliance Certification was previously submitted to DEQ for the time period January 1, 2012 to June 30, 2012 by letter 12-815-103 dated August 6, 2012. NRE reports continuous compliance with all permit conditions contained in Section VIII Process Equipment Requirements – NRE: New River Energetics of the Title V permit during the entire reporting period. The method(s) used to determine compliance is/are the methods specified in the Title V permit.

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name of Responsible Official (Print): M. Anthony Miano

Title: Operations Manager, Alliant Techsystems

Signature: M. Miano Date: 2/21/13

Certification
No Sources Subject to the Miscellaneous Organic NESHAP

Alliant Techsystems Operations, LLC (a.k.a New River Energetics, a.k.a NRE) is submitting this notification to BAE Systems // Ordnance Systems Inc. the operating contractor for the Radford Army Ammunition Plant, pursuant to NRE's understanding of the Miscellaneous Organic NESHAP (MON).

The commercial powder operation uses no hazardous air pollutants (HAPs) for production. However, BAE uses toluene as a denaturant for ethanol. BAE supplies raw materials to NRE that contain ethanol and traces of toluene. No denaturant is added to the ethanol once the material is received in the raw materials. Toluene is not considered to be used for its solvent properties. This operation is therefore exempt from the MON as explained in the February 28, 2008 letter from DEQ.

The flexible energetic facility (FEF) has a condition in the state construction and operation permit that states "the permittee shall not use any toxic compound that would make the facility subject to federal emissions standards in 40 CFR 61 or 40 CFR 63. The MON is a 40 CFR 63 emission standard. The FEF currently meets the exemption in the MON (40 CFR 63.2435(c)(1)) "The requirements in this subpart do not apply to the operations specified in paragraphs (c)(1) through (6) of this section. (c)(1) Research and development facilities, as defined in section 112(c)(7) of the CAA."

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name of Responsible Official (Print): M. Anthony Miano

Title: Operations Manager, Alliant Techsystems

Signature: M. Miano Date: 2/21/13

bc: Administrative File
P. W. Holt
J. Flint
J. Betteken
L. DiIoia, Jr.
Env. File

Attachment 5

2012 Title V Annual Compliance Certificate
1H2012 Title V Semiannual Monitoring Report
Submitted to VDEQ by ATK on 6 August 2012

August 6, 2012

Mr. Robert Weld
Department of Environmental Quality
Blue Ridge Regional Office
3019 Peters Creek Road
Roanoke, VA 24019

Subject: 2012 Title V Annual Compliance Certificate and 1H2012 Title V Semi-Annual Monitoring Report

Dear Mr. Weld:

Enclosed please find the:

- DEQ form titled Semi-Annual Monitoring Report, including Plant-Wide Summary of Deviations and DEQ form titled Failure To Monitor, Keep Records Or Report, for the period of January 1 through June 30, 2012, and
- DEQ form Title V Annual Compliance Certification Reporting Form for the period of January 1 through June 30, 2012

As of July 1, 2012, Alliant Techsystems Inc (ATK), no longer operates the Radford Army Ammunition Plant (RFAAP). It is our understanding that the permittee on December 30, 2012 will be required to produce the Title V annual compliance certificate for RFAAP as stated in Title V permit §XIII (D) *"Exclusive of any reporting required to assure compliance with the terms and conditions of this permit, the permittee shall submit to EPA and to DEQ no later than March 1 each calendar year a certification of compliance with all terms and conditions of this permit including emission limitation standards and work practices"*. As the operator of the major stationary source for part of the year, ATK has chosen to submit an annual compliance certificate for the period of ATK's operation of RFAAP from January 1, 2012 to June 30, 2012. This is consistent with the language of §114(a)(3) of the Clean Air Act which refers to the preparer of the compliance certificate as the owner or operator of the source. This report will be available to the current operating contractor, BAE Systems Ordnance Systems Inc, for their preparation of a separate annual compliance certificate to be certified for their period of performance from July 1, 2012 to December 31, 2012.

The 1H2012 Semi-Annual Monitoring Report includes the attached RFAAP Plant-wide Summary of Deviations spreadsheet, per DEQ approval following discussions between Jody Lambert of DEQ and Paige Holt of RFAAP on May 22, 2004. This spreadsheet includes deviations from permit requirements along with information that indicates that the affected facility is maintained and operated during these incidents in a manner consistent with air pollution control practices for minimizing emissions for opacity events. This spreadsheet only contains incidents that lasted for less than 60 consecutive minutes which have not previously been reported.

On January 9, 2012, Judge Paul L. Friedman of the United States District Court for District of Columbia ("D.C. District Court") issued a decision in which he invalidated and "vacated" EPA's delay of the effective date of the National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Industrial, Commercial and Institutional Boilers and Process Heaters; 76 Fed. Reg. 15,608 (Mar. 21, 2011) ("Boiler MACT"). EPA had formally delayed the effective date of the Boiler MACT in the Industrial, Commercial, and Institutional Boilers and Process Heaters and Commercial and Industrial Solid Waste Incineration Units: Final rules; Delay of effective dates, 76 Fed. Reg. 28,662 (May 18, 2011) (the "Delay Notice"). Under the Boiler MACT, initial notifications for existing affected sources were due on or before September 21, 2011, or 120 days after the effective date. However, as of September 21, 2011, and throughout this reporting period the Delay Notice was still in effect. We do not believe that our failure to previously submit an initial notification on or before September 21, 2011 constitutes a deviation from any permit requirements because we reasonably relied on the Delay Notice. Nothing in this report concedes a violation or waives any defenses that might be available. Moreover, RFAAP wishes to clarify that it appropriately did not

submit the initial notification based on information and belief formed after reasonable inquiry in light of the Delay Notice and EPA's own example notification form on its website that contained the following statement:

> *Because of the current stay of the effective date of the Boiler MACT, the initial notification and any other forms pertaining to this rule will not be due until further notice.*

RFAAP is not reporting a deviation of Title V permit condition X.A.1 during this reporting period because the reporting requirement to submit the boiler MACT initial notification on or before September 21, 2011 was not an applicable requirement of the MACT regulation for fossil fuel fired boilers, based on the above understanding of the impact of the January 9, 2012 decision.

Should there be any questions regarding this report or any of the attachments herein, please contact Laura Habersack at 540-831-4801.

Sincerely,

Paige W. Holt, Environmental Manager
Alliant Techsystems Inc.

Enclosures:

DEQ Form - Title V Semi-Annual Monitoring Reporting
DEQ Form - FAILURE TO MONITOR, KEEP RECORDS OR REPORT
DEQ Form - "Other" Deviations
DEQ Form - Title V Annual Compliance Certification Reporting
RFAAP Plant-wide Summary of Deviations spreadsheet

Copies of Previously Submitted Reports-

1Q12 NOx CEM Excess Emission Report- RFAAP Nitrocellulose Process
1Q12 CO CEM Excess Emission Report- RFAAP Explosive Waste Incinerators
2Q12 NOx CEM Excess Emission Report- RFAAP Nitrocellulose Process
2Q12 CO CEM Excess Emission Report- RFAAP Explosive Waste Incinerators
1H12 MACT Subpart EEE Report- RFAAP Explosive Waste Incinerators
2-15-2012 AOP Fluid Level Tower Control
2-21-2012 Notice of Emergency Safety Vent Opening
2-28-2012 NOx Emissions from SCR Exceeded Hourly Average on 01-29-12
2-28-2012 Excess Opacity from the Powerhouse at RFAAP
3-26-2012 Malfunction of the Fan Motor Resulting in NOx Emissions from the Piccolo Scrubber
4-23-2012 Notice of Emergency Safety Vent Opening
5-24-2012 Notice of Emergency Safety Vent Opening
6-29-2012 Fume-off at Spent Battery 3003 Resulting in NOx Exceedence

cc: Clean Air Act Title V Compliance Certification (3AP00)
U.S. Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Permit Condition No. & DESCRIPTION OF REQUIREMENT	DESCRIPTION OF DEVIATION (including date)	REASON FOR DEVIATION & CORRECTIVE ACTION TAKEN
VII.B.4 The piccolo scrubber shall be equipped with a device to continuously measure the scrubber liquid flow rate. The monitoring device shall be installed, maintained, calibrated and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations. The monitoring device shall be provided with adequate access for inspection and shall be in operation when the scrubber is operating.	Algae buildup on the rotameters used to measure the piccolo scrubber liquid flow rate prevented personnel from easily determining the rate on the dates during this reporting period. The piccolo scrubber was in service on 1/1-1/4, 1/23-1/24, 1/30-2/4, 2/11-2/12, 2/13, 3/11-3/12, and 3/20 before April 2012. The observed condition of the rotameter indicates that it was not maintained with approved procedures as required by this condition even though the rotameter was in operation when the scrubber was in service.	After this deviation was identified in January 2012 during preparation of the semi-annual report, initial steps were initiated to clean the rotameter so that it would be able to indicate flow when the piccolo scrubber was in service during 2012. Cleaning improved the condition of the rotameter so flow could be observed but the algae grew back. The rotameter was replaced with a flow meter in April 2012 as shown below.  Rotameter with algae growth  Flow meter installed April 2012

Permit Condition No. & DESCRIPTION OF REQUIREMENT	DESCRIPTION OF DEVIATION (including date)	REASON FOR DEVIATION & CORRECTIVE ACTION TAKEN
VII.A.4 The temperature of the fired heater acid gas outlet preceding the SCR catalyst column shall be maintained between 500°F and 650°F during operation.	Temperatures are recorded hourly on daily inspection sheets and continuously monitored and recorded in site data historian (refer to Active Factory tag ID 3055-TI-647.) Nitrocellulose production can be monitored by Active Factory tag ID 3045-L1-QI-290 and 3045-L2-QI-290. The SCR fired heater acid gas outlet temperature was less than 500°F during the following events:	RFAAP determines intermittent compliance with this permit condition because operating logs indicate that the SCR was in operation when the recorded temperature was below 500°F during these instances. The SCR was taken out of service or put back in service on the same dates that these low temperature events occurred and the temperature remained above 500°F during operation for the rest of the reporting period. The nitrocellulose production lines were shutdown during each of the incidents.

Date	Start	End	Reason
1/4/2012	16:49	18:05	Returning from the Piccolo to the SCR following malfunction freeze event. Nitrocellulose production lines were shutdown.
1/24/2012	11:33	12:38	*Malfunction*: Low differential pressure at the fume fan caused the furnace to shut off. Nitrocellulose production lines were shutdown.
2/11/2012	17:01	17:15	*Malfunction*: Power failure after pine tree fell on lines. Nitrocellulose production lines were shutdown.
3/20/2012	9:49	10:15	*Malfunction*: Fan at the gas fired heater failed. Nitrocellulose production lines were shutdown.
6/25/2012 - 6/26/2012	9:45	00:11	SCR was off-line on 6/25 to replace level controller and Piccolo scrubber was in operation. Piccolo shut down at 9:45AM to switch back to the SCR. SCR heater not to temperature until 00:11. Interlock was overridden. Nitrocellulose production lines were shutdown.

FAILURE TO MONITOR, KEEP RECORDS OR REPORT **Registration No. 20656** **Page 3 of 4**
Submitted as Part of Semi-Annual Monitoring Report **Reporting Period: 1/1/2012 to 6/30/2012**

Permit Condition No. & DESCRIPTION OF REQUIREMENT	DESCRIPTION OF DEVIATION (including date)	REASON FOR DEVIATION & CORRECTIVE ACTION TAKEN
VII.B.3. The tray scrubber shall be equipped with devices to continuously measure the scrubber liquid flow rate and the differential pressure drop across the scrubber. Each monitoring device shall be installed, maintained, calibrated and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations. Each monitoring device shall be provided with adequate access for inspection and shall be in operation when the scrubber is operating.	The tray scrubber is equipped with devices to measure the liquid flow rate and pressure drop across the scrubber. The devices are maintained calibrated and operated with approved procedures. Intermittently the pressure drop across the scrubber was recorded as zero during the reporting period.	RFAAP determines intermittent compliance with this permit condition because operating logs indicate that the SCR was in operation when the pressure drop across the scrubber recorded zero. It is believed that this was due to a data transmission error between the scrubber and the Active Factory server.

12-815-103
LHabersack

FAILURE TO MONITOR, KEEP RECORDS OR REPORT **Registration No. 20656** **Page 4 of 4**
Submitted as Part of Semi-Annual Monitoring Report **Reporting Period: 1/1/2012 to 6/30/2012**

Permit Condition No. & DESCRIPTION OF REQUIREMENT	DESCRIPTION OF DEVIATION (including date)	REASON FOR DEVIATION & CORRECTIVE ACTION TAKEN
IX.B.1 The permittee shall comply with the operating requirements and operating parameter limits specified in the September 29, 2003 or most current Documentation of Compliance prepared pursuant to 40 CFR 63, Subpart EEE, Section 63.1211; with the operating requirements and operating parameter limits specified in the Notification of Compliance prepared pursuant to 40 CFR 63, Subpart EEE, Section 63.1210; and with monitoring requirements in accordance with 40 CFR 63, Subpart EEE, Section 63.1209. IX.C The permittee shall maintain records in accordance with 40 CFR 63, Subpart EEE, Section 63.1211. IX.E The permittee shall comply with reporting requirements in accordance with 40 CFR 63, Subpart EEE, Section 63.1211.	RFAAP did not have and maintain an ESV operating plan during the beginning of this reporting period as required by 40 CFR 63, Subpart EEE, Section 63.1206(c)(4)(ii) because our initial evaluation had shown that the baghouse bypasses were not ESVs. RFAAP is reporting this as a deviation to these permit conditions because these permit conditions reference section 63.1211 which, in turn, references sections 63.1206 and 63.1209 of Subpart EEE. RFAAP determines intermittent compliance with IX.B.1 as uncorrected CO values >3000 ppmv may not be recorded as 10,000 ppmv as required by 63.1209(a)(3)(i) for determining hourly rolling average CO.	These deviations were self-identified and reported to VDEQ in 2010 following an environmental audit of Subpart EEE requirements. When this MACT requirement first took effect, both RFAAP and VDEQ did not consider the baghouse bypass vent to be an ESV subject to the Section 63.1206(c)(4) requirements; however, RFAAP determined that the requirements in 63.1206(c)(4)(iv) to report ESV openings and in 63.1206(c)(4)(ii)to maintain a ESV operating plan did apply. RFAAP re-identified this gap in its records and reporting systems during preparation of the 2H11 Title V semi-annual report. RFAAP has an ESV operating plan that includes procedures for reporting each instance which was completed in February 2012. RFAAP completed training on these ESV requirements and a review of recordkeeping for all affected personnel during the last week of May 2012. CO values greater than 3000 ppmv are consistently recorded as 10000 ppmv in determining the hourly rolling average effective April 2012.

FAILURE TO MONITOR, KEEP RECORDS OR REPORT **Registration No. 20656**
Submitted as Part of Semi-Annual Monitoring Report **Reporting Period: 1/1/2012 to 6/30/2012**

Condition No. & Description of Requirement	**Description of Deviation** (time, emission unit, description of event, cause)	**Description of Associated Monitoring Requirement**	**Description of corrective measures taken** (demonstrating a timely & appropriate response)
III.A.5 Boilers 2, 3, 4, and/or 5 visible emissions < 20% opacity	Excess opacity from Boilers 2, 3, 4, and/or 5 as reported in attached summary of deviations	Other material information provided by COMS voluntarily installed and placed in operation during 2007.	Followed SOP as reported in attached summary of deviations
X.A.7 Visible emissions . . . shall not exceed 20 % except during one six-minute period in any one hour in which visible emissions shall not exceed 60 %.	Excess opacity from: • Acid truck/rail car unloading • Acid tank farm scrubber • Piccolo scrubber • Flyash baghouse and truck loading as reported in the attached summary of deviations.	Routine visible emissions observations of emission sources	Followed SOP, conducted root cause analysis, and applied corrective actions when necessary as reported in attached summary of deviations

(Report deviations which may have caused excess emissions for more than one hour on a prompt deviation report form, not here)

12-815-103
LHabersack

Plant-wide Summary of Deviation (Powerhouse and WPI events are tracked on a separate spreadsheet.)						
Date	Start Time	Area	Equipment	Description of Deviation and Root Cause	Duration	Magnitude of Emissions or Opacity, If Known	Immediate Response and Corrective Action
1/24/2012	12:20 PM	NC	SCR to Piccolo	Low Differential Pressure at fume fan caused the furnace to shut off. Fumes diverted to the Piccolo. Opacity observed from the Piccolo stack.	25 mins	>50%	Followed SOP.
3/15/2012	10:08AM	Acid	Tank Farm Scrubber	NOx Opacity from the acid tank farm scrubber stack	55 mins	>20%	Followed SOP, Turned on peroxide. Suspected cause is pyro addition from the NC area.
3/20/2012	10:00AM	Acid	Tank Farm Scrubber	NOx out of acid tank farm scrubber stack	4 hours intermittent	>20-25%	Followed SOP, Continued maintenance on the peroxide pump, decreased acid transfer operations
3/28/2012	3:50 AM	Solvents	Oulet Analyzer, Activated Carbon Recovery System	Flame on inlet analyzer went out during standby exhaust analayzer. At that time the inlet analyster was at 47 pmm and the outlet was at 8 ppm.	13 mins	None	Followed SOP. Re-lit flame and recalibrated system.
3/29/2012	8:45 AM	PH	Fly ash truck load	Initial water conditioning insufficent to contain dust.	15 mins	>20%	Adjusted water flow to suppress dusting.
4/16/2012	9:55 PM	Acid	SCR	Fume off resulted in exceeding Out NOx monitor range (250 ppm) for 1.5 minutes	1.5 mins	no excess opacity noted	Followed SOP. Increased ammonia feed. Fume off in L1 Spent Acid tank.
4/17/2012	11:00 AM	Acid	SCR	HRA of Outlet Nox >125 ppm ocurred during 1 hour of SCR maintanence.	240 mins	no excess opacity noted	Ammonia valve failed. The SCR remained in-line and the water flow was increased to scrubber to minimize emissions.
4/24/2012	1:30PM	PH	Baghouse	Baghouse emissions due to inspection and maintenance	12 mins	>50%	Minimized cleaning activities to reduce intensity and duration.
5/16/2012	11:45AM	PH	Baghouse	Loading flyash truck. Damp ash not flowing well from silo to ash feeder. Operator was tapping ash chute with hammer and pipe plug on chute clean-out fell off. Flyash flowed out clean-out port until plug was reinstalled.	15 mins	>20	Pipe plug was recovered and replaced. It was tightened with pipe wrench.
6/4/2012	2:00PM	Acid	Truck Unloading	Sulfuric acid fume cloud	20 mins	>60%	Oleum truck unloaded contained incorrect acid. Oleum was 67% instead of 20%. This caused a large plume of sulfuric acid. It was determined that Dupont shipped incorrect acid.
6/20/2012	2:00 PM	Acid	Rail Car Unloading	Sulfuric acid fume cloud	10 mins	>20	Oleum rail car unloaded. Air pressure was shut off when the fume cloud was observed.
6/28/2012	3:45 PM	Acid	Rail Car Unloading	Sulfuric acid fume cloud	10 mins	>20	Oleum rail car unloaded. Air pressure was shut off when the fume cloud was observed.

Powerhouse Visible Emissions Summary

Date	Start Time	Unit #1	#2	#3	#4	#5	Description of Deviation and Root Cause	Duration	Maximum 6-minute average measured (% Opacity)	Immediate Response and Corrective Action
1/2/2012	8:30 PM			X			Rebalancing load between boilers	12 min	36.5	Followed SOP.
1/3/2012	6:12 AM		X				Soot Blowing	12 min	25	Adjusted fan per SOP.
1/4/2012	6:48 AM				X		Soot Blowing	12 min	23.1	Followed SOP.
1/14/2012	6:12 AM		X				Soot Blowing	12 min	35.6	Adjusted fan per SOP.
1/15/2012	8:18 PM		X	X	X	X	Soot Blowing	12 min	24.7	Followed SOP.
1/26/2012	1:48 AM			X			Sudden loss of coal (Feeder Failure)	12 min	42.7	Followed SOP.
1/28/2012	2:00 PM		X	X	X	X	Soot Blowing	24 min	41.6	Followed SOP.
1/29/2012	2:12 PM		X	X	X	X	Soot Blowing	12 min	28.7	Followed SOP.
2/4/2012	4:12 PM		X				Shut down of Boiler #2	12 min	42.3	Followed SOP.
2/11/2012	12:36 PM				X		Boiler 4 Copes-Vulcan Feedwater valve failed	12 min	24.3	Followed SOP. Placed 2B mill into service and dropped 4B mill; Instrument tech contacted to repair valve
2/13/2012	8:24 PM		X	X	X	X	Soot Blowing	18 min	22.4	Followed SOP.
2/14/2012	8:42 PM					X	Shut down of 5B Mill	18 min	24.6	Followed SOP. Reduced Mill load and shut down.
2/17/2012	7:18 AM		X				Shut down of Boiler #2	18 min	38.3	Followed SOP.
2/17/2012	7:12 PM					X	5B Coal Pipe stopped up	30 min	65.6	Followed SOP. Oil used to support pressure while pluggage was cleared.
2/18/2012	4:06 PM			X			Failure of ESP Transformer-Rectifier set	18 min	22.1	Followed SOP. Put Boiler 2 online and dropped 3B mill.
2/19/2012	6:18 AM					X	Soot blowing in Boiler #5	12 min	29.1	Followed SOP.
2/19/2012	2:06 PM				X	X	Soot blowing in Boiler #4 and #5	24 min	34.1	Followed SOP.
2/19/2012	10:44 PM					X	Soot blowing in Boiler #5	12 min	31	Followed SOP.
2/20/2012	6:12 AM					X	Soot blowing in Boiler #5	12 min	30.9	Followed SOP.
2/21/2012	3:48 AM					X	Start up of 2B Mill failed. Restarted 5B.	18 min	48.3	Followed SOP.
2/21/2012	5:06 PM					X	Soot Blowing	18 min	29.8	Followed SOP.
2/21/2012	11:15 PM					X	Feedwater valve failure	18 min	26.3	Followed SOP. Moved load to the other boilers and dropped one mill on Boiler 5.
2/22/2012	6:01 AM		X	X			Soot Blowing in Boilers #2 and #3	12 min	33.5	Followed SOP.
2/25/2012	6:11 AM			X			Soot Blowing	12 min	21.3	Followed SOP.
2/25/2012	12:42 PM					X	Rock Jammed in 5A Feeder	102 mins	79.4	Followed SOP, attempted to insert oil guns but blocked, tried 2B feeder but inlet gate would not open. Used fuel in boilers 3 and 4. NC area took tubs off. Cleared oil gun pipes in boiler 5, lit lower guns, removed rock, restarted feeder 5.
2/26/2012	12:54 PM		X				Sootblowing	18 mins	64.7	Followed SOP.
2/26/2012	11:06 PM		X				Sootblowing	12 mins	38.3	Followed SOP.
3/1/2012	10:00PM				X		4A Exhauster Coupling Failed	12 mins	50.3	Followed SOP, shut down mill, Determined that a contractor had placed the insert in the wrong direction when replaced.

Powerhouse Visible Emissions Summary

Date	Start Time	Unit #1	#2	#3	#4	#5	Description of Deviation and Root Cause	Duration	Maximum 6-minute average measured (% Opacity)	Immediate Response and Corrective Action
3/3/2012	2:18 PM		X				Change in differential pressure in ESP caused ash disturbance.	18 mins	20.7	Followed SOP.
3/6/2012	3:30PM					X	Shutdown Boiler #5 and start up 2B Mill	12 mins	32.8	Followed SOP.
3/8/2012	08:54AM		X				Shutdown 2B Pulverizer	12 mins	42.0	Followed SOP, Ash exceeded ESP capacity
3/11/2012	05:36PM		X				Rock Jammed in 2A Feeder	12 mins	35.1	Followed SOP.
3/19/2012	03:18AM					X	5A Coal feeder failure	12 mins	35.9	Followed SOP. Malfunction due toggle switch and inlet valve closed. Change the switch to improve feedback and ensure performance.
4/10/2012	6:12AM					X	Sootblowing with two mills online	12 mins	24.8	Followed SOP.
4/18/2012	8:06AM						ID and FD Fans were started following boiler shutdown for annual manintance. Ash disturbance caused spike in opacity before ESP could manage it following start-up.	6 mins	69.3	Boiler fans and ESP were started per SOP but corrective actions from this start-up prompted change in start-up strategy.
5/3/2012	6:06AM			X			Sootblowing	18 mins	34.3	Followed SOP. Blow one side of the unit at a time and waited until opacity returned to normal before blowing the other side.
5/13/2012	4:24 AM				X		Start-up boiler #2, shut-down boiler #4.	12 mins	31.6	Followed SOP. Non-consecutive 6 minute periods. Fan 4 bearing issue.
5/16/2012	8:36 PM					X	Cleaning chute between 5A Feeder and 5A Mill. Coal flow interrupted and fire lost in boiler.	12mins	48.8	Followed SOP for boiler restart.
5/18/2012	2:54 PM		X				Soot Blowing	12 mins	30.6	Followed SOP
5/22/2012	6:06AM				X		Scaper failed. 4A Mill overloaded with rejects.	12 mins	25.2	Followed SOP. Put 5B Mill on while 4A scrapers were replaced. 4A Mill placed back in service per SOP.
5/24/2012	12:48 PM			X			Change in differential pressure in ESP caused ash disturbance during maintenance.	18 mins	29.3	Followed SOP.
5/26/2012	10:24 AM				X		Boiler Operator used an air lancing rod to clean water tubes on Boiler #4.	12 mins	23.7	Operator discontinued cleaning of the water tubes on Boiler #4 once opacity increased.
5/26/2012	3:24 PM		X				Shutdown of Boiler #2 at 3:50pm due to lack of steam load.	30 mins	30.7	Followed SOP.
5/27/2012	10:18AM					X	#5 Sudden loss of coal (mill failure)	18 mins	24.3	Followed SOP.
5/27/2012	6:30 PM				X		#4A Feeder failure Sudden loss of coal (feeder failure)	12 mins	25.5	Followed SOP
5/29/2012	5:00 PM				X	X	Electrical storm tripped Boilers 4 & 5	18 mins	47	Restarted boilers per SOP
6/12/2012	7:36PM				X		Shutdown of Boiler # 4 for annual inspection	12 mins	31.2	Followed SOP.
6/13/2012	6:30AM					X	ID Fan Failure. #5 Boiler Fans.	42 mins	59.1	Followed SOP.
6/14/2012	3:24AM					X	ID Fan Failure. #5 Boiler Fans.	12 mins	41.7	Followed SOP.
6/16/2012	5:30AM			X		X	Soot Blowing	12 mins	34.5	Followed SOP.
6/17/2012	5:12 AM			X		X	Soot Blowing	12 mins	22.3	Followed SOP.
6/19/2012	1:54PM						Soot Blowing	12 mins	23.9	Followed SOP.
6/19/2012	5:00PM					X	Soot Blowing	12 mins	27.5	Followed SOP.

Powerhouse Visible Emissions Summary									
		Unit							
Date	Start Time	#1	#2	#3	#4	#5	Description of Deviation and Root Cause	Duration	Maximum 6-minute average measured (% Opacity)	Immediate Response and Corrective Action
6/23/2012	10:36 AM		X				Boiler Startup	30 mins	33.5	Followed SOP.
6/24/2012	1:12AM			X			Boiler Shutdown	12 mins	28.2	Followed SOP.
6/25/2012	4:12AM					X	Start up of 5B mill to reduce Boiler 2 load	12 mins	25.7	Followed SOP.
6/26/2012	5:30AM		X			X	Adjusting loads between Boilers 2 and 5, four mills on line and load fluctuating	12 mins	24.6	Followed SOP.
6/26/2012	6:36AM		X				Shutdown 2B Mill	12 mins	21	Followed SOP.
6/29/2012	9:00 PM						Power Failure Caused Boiler Shutdown	UNK	UNK	Power failure due to rare Derecho storm caused two boilers to shutdown. Opacity during event is unknown. The opacity monitor workstation was returned to service at 1:06AM on 6/30. The opacity was 5% at that time.
6/30/2012	5:18 PM					X	No. 5 forced draft variable frequency drive tripped off line due to clogged air filter.	12 mins	34	Followed SOP.

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

TITLE V ANNUAL COMPLIANCE CERTIFICATION REPORTING FORM

This form may be submitted to report the compliance status for the permit conditions in a Virginia DEQ Title V Permit. Each field below must be completed and the appropriate box must be checked.
Note: If compliance was not continuous, this certification is not complete unless DEQ and EPA have a copy of the Semi-annual Monitoring Report(s) covering the period where compliance was not continuous (either previously received (DEQ) or attached to this report (EPA)).

Date: Monday, August 06, 2012

To: DEQ's Blue Ridge Regional Office, Regional Director

CC: Clean Air Act Title V Compliance Certification (3AP00)
U. S. Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Source Name: RFAAP Registration Number: 20656 and 21258

Source Address: SR 114 City: Radford State: VA Zip: 24143

This report satisfies our requirement for the **Title V Annual Compliance Certification Report (ACC)** and identifies all deviations and periods of non-compliance for the reporting period indicated.

For questions or concerns regarding this report, please contact the following individual:

Contact Name: Laura Habersack Contact Title: Environmental Engineer Phone Number: 540-831-4801 Ext._____

Reporting Period Dates:
1/1/12 through 6/30/12

Title V Permit Effective Date: 1/15/04
Each condition is hereby identified and included by reference into this certification.

☐ 1. This source was in continuous compliance with all permit conditions contained in the Title V permit during the entire reporting period. The method(s) used to determine compliance is/are the method(s) specified in the Title V permit.

☒ 2. This source was in continuous compliance with all permit conditions contained in the Title V permit during the entire reporting period EXCEPT for the deviations identified in Title V Semi-annual Monitoring Report(s) dated 8/6/2012.
The reports are incorporated by reference into this certification and have either been previously submitted or are attached. Unless otherwise indicated and described in the Title V Semi-annual Monitoring Report(s), the method(s) used to determine compliance is/are the method(s) specified in the Title V permit.

Comments:
(if additional space is needed, please attach supporting documentation and indicate below)

Attachments (list here): 1H2012 Title V Semi-Annual Monitoring Report and Attachments

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name of Responsible Official: Michael A. Miano Title: Operations Manager, ATK

Signature: Michael A. Miano Date: 8/9/12

Name of Responsible Official: Wm. Byron Penland Title: Commander, LTC, US Army

Signature: Wm. Byron Penland Date: 10 Aug 2012

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

TITLE V SEMI-ANNUAL MONITORING REPORTING FORM

This form may be submitted to report all deviations from the conditions in a Virginia DEQ Title V Permit. All Prompt Deviation Reports and/or any supporting information should be submitted as an attachment and listed below.

Date: **Monday, August 6, 2012**

To: **West Central Regional Office, Regional Director**

Source Name: **Radford Army Ammuniton Plant** Registration Number: **20656**

Source Address: Route 114, P.O. Box 1 City: Radford State: VA Zip: 24143

This report satisfies our requirement for the **Title V Semi-Annual Monitoring Report (SAMR)**. This report identifies all deviations and periods of non-compliance for the reporting period indicated. All deviations and periods of non-compliance, for the reporting period indicated, have been addressed in this Semi-Annual Monitoring Report.

Please contact **Laura Habersack, Engineer** at **540-831-4801**, ext. with questions or concerns regarding this report.

(Each Field Below Must be Completed and the Appropriate Box Must be Checked)

Reporting Period Dates: **1/1/2012** through **6/30/2012** Title V Permit Effective Date: **January 15, 2004**

☐ 1. During the reporting period, ALL monitoring and associated record keeping requirements in the Title V Permit were met and no deviations from these requirements or any other conditions occurred.

☒ 2. During the reporting period, all monitoring and associated recordkeeping requirements in the Title V Permit were met and no deviations from these requirements or any other terms or conditions occurred, EXCEPT for the deviations identified below:

- ☒ A. Deviations were addressed in **CEM Excess Emission Report(s)** Dated: **4/17/2012 4/24/2012 7/12/2012 7/13/2012**
- ☐ B. Deviations were addressed in **Fuel Reports** Dated: ____ ____ ____ ____
- ☒ C. Deviations were addressed in **MACT Reports** Dated: **7/24/2012 7/24/2012** ____ ____
- ☒ D. Deviations were addressed in **Malfunction Reports** Dated: **2/15/2012 2/28/2012 2/28/2012 3/26/2012**
- ☐ E. Deviations were addressed in **Prompt Deviation Reports** Dated: ____ ____ ____ ____
- ☒ F. "**Other Deviations**," which were not previously reported, are described in the **Attachment(s)** to this report.

Comments: Malfunction reports con't: 6/29/2012 and ESV opening Reports: 2/21/2012, 4/23/2012, 5/24/2012

Attachments: DEQ forms Failure to Monitor, Keep Records or Report and "Other Deviations"; Plant-wide Summary of Deviations; 3Q and 4Q CEM Excess Emission Reports- NC SCR NOx and 440/441 EWI CO; 2H11 MACT EEE

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name of Responsible Official: Michael A. Miano Title: Operations Manager, ATK

Signature: MM Miano Date: 8/9/12

Name of Responsible Official: Wm. Byron Penland Title: Commander, LTC, US Army

Signature: Wm Byron Penland Date: 10 AUG 2012

ORDNANCE SYSTEMS INC.
4050 Peppers Ferry Road, Route 114
Radford, VA 24141
Mail: P.O. Box 1, Radford, VA 24143
Telephone (540) 639-7323

28 February 2014

Mr. Frank Adams
Blue Ridge Regional Office
Virginia Department of Environmental Quality
3019 Peters Creek Road
Roanoke, VA 24019

Subject: **2013 Title V Annual Compliance Certification**
2H2013 Title V Semiannual Monitoring Report (July 1 through December 31, 2013)
Radford Army Ammunition Plant, Radford, Virginia (Permit VA-20656)

Dear Mr. Adams:

BAE Systems Ordnance Systems Inc. (OSI), operating contractor for Radford Army Ammunition Plant (RFAAP) respectfully submits this 2013 Title V Annual Compliance Certification and 2H2013 Title V Semiannual Monitoring Report for the period July 1 through December 31, 2013 to satisfy the reporting requirements of Title V permit condition XIII.D.

To satisfy the Title V reporting requirements, the 2H2013 Semiannual Monitoring Report includes the attached *Plant-Wide Summary of Deviations Spreadsheet* (Attachment 2). The *Plant-Wide Summary of Deviations Spreadsheet* contains only incidents that lasted for less than 60 consecutive minutes and which have not previously been reported. This spreadsheet includes deviations from permit requirements along with information that indicates that the affected facility is maintained and operated during these incidents in a manner consistent with air pollution control practices for minimizing emissions for events. Previously, the Semiannual Monitoring Report included the *Powerhouse Visible Emissions Summary*, as per previous agreement between RFAAP and VDEQ on 22 May 2004. However, per agreement with VDEQ on 19 December 2013, RFAAP began submitting quarterly *Excess Emissions Reports for the Powerhouse* effective the first quarter of 2013. A summary of documents submitted during this semiannual monitoring period are appended to this report (Attachment 4).

Included in this submittal is the Title V Semiannual Monitoring Reporting Form (Attachment 1). Only deviations from the permit conditions during 2H2013 are included in this report. Records documenting compliance with all individual Title V permit conditions are maintained on site and are available for VDEQ review.

The request for VDEQ to amend the Title V permit for RFAAP to delete all provisions of the permit governing New River Energetics (NRE) was granted in May 2013, and ATK will be submitting their own T*itle V Annual Compliance Certification* for the NRE facility (Registration No. 21258, AFS ID No. 51-121-0082) which addresses former Title V permit Condition VIII (*Process Equipment Requirements – NRE: New River Energetics*).

If you should have any questions or comments please contact MaryAnn Bogucki at 540-639-7688 or maryann.bogucki@baesystems.com.

Respectfully,

Jay Stewart
Environmental Manager

Coordination with RFAAP Staff:

Len DiIoia, Jr.

Enclosures: Additional Certification Document
2013 Title V Annual Compliance Certification
Attachment 1: Title V Semiannual Monitoring Reporting Form
Attachment 2: Failure to Monitor, Keep Records or Report Form
Attachment 3: "Other" Deviations Forms/Plant-wide Summary of Deviations Spreadsheet
Attachment 4: Summary of Previous Reporting for the 2H2013 Semiannual Monitoring Period

cc: RFAAP ACO Staff/ DiIoia
File
USEPA Region III

FedEx: #7974 0893 5780 (VDEQ)
#7974 0900 7542 (USEPA Region III)

BAE SYSTEMS

ORDNANCE SYSTEMS INC.
4050 Peppers Ferry Road, Route 114
Radford, VA 24141
Mail: P.O. Box 1, Radford, VA 24143
Telephone (540) 639-7323

Certification of 28 February 2014 submission to Frank Adams (Virginia Department of Environmental Quality) of the 2013 Annual Compliance Certification and the 2H2013 Title V Semiannual Monitoring Report for the period of July 1 through December 31, 2013, as required under Permit VA20656 - Radford Army Ammunition Plant, Radford, Virginia.

DOCUMENT CERTIFICATION FORM

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE:
NAME: Luis A. Ortiz
TITLE: Lieutenant Colonel, Commanding
COMPANY: U.S. Army

DATE: 19 FEB 14
REGISTRATION NUMBER: 20656
ADDRESS: PO Box 1
Radford, VA 24143

SIGNATURE:
NAME: William M. Barnett
TITLE: General Manager, RFAAP
COMPANY: BAE Systems Ordnance Systems Inc.
PHONE: (540) 639-8400
EMAIL: william.m.barnett@baesystems.com

DATE: 18 Feb 14
REGISTRATION NUMBER: 20656
ADDRESS: PO Box 1
Radford, VA 24143

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

TITLE V ANNUAL COMPLIANCE CERTIFICATION REPORTING FORM

This form may be submitted to report the compliance status for the permit conditions in a Virginia DEQ Title V Permit. Each field below must be completed and the appropriate box must be checked.
Note: If compliance was not continuous, this certification is not complete unless DEQ and EPA have a copy of the Semi-annual Monitoring Report(s) covering the period where compliance was not continuous (either previously received (DEQ) or attached to this report (EPA)).

Date: Friday, February 28, 2014

To: DEQ's Blue Ridge Regional Office, Regional Director

CC: Clean Air Act Title V Compliance Certification (3AP00)
U. S. Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Source Name: Radford Army Ammunition Plant Registration Number: 20656

Source Address: Route 114, P.O. Box 1 City: Radford State: VA Zip: 24143

This report satisfies our requirement for the **Title V Annual Compliance Certification Report (ACC)** and identifies all deviations and periods of non-compliance for the reporting period indicated.

For questions or concerns regarding this report, please contact the following individual:

Contact Name: MaryAnn Bogucki Contact Title: Environmental Affairs Specialist - Air Phone Number: 540-639-7688 Ext.-

Reporting Period Dates:
1/1/2013 through 12/31/2013

Title V Permit Effective Date: January 15, 2004
Each condition is hereby identified and included by reference into this certification.

☐ **1.** This source was in continuous compliance with all permit conditions contained in the Title V permit during the entire reporting period. The method(s) used to determine compliance is/are the method(s) specified in the Title V permit.

☒ **2.** This source was in continuous compliance with all permit conditions contained in the Title V permit during the entire reporting period EXCEPT for the deviations identified in Title V Semi-annual Monitoring Report(s) dated 8/29/2013 (1H2013) and 2/28/2014 (2H2013).
The reports are incorporated by reference into this certification and have either been previously submitted or are attached. Unless otherwise indicated and described in the Title V Semi-annual Monitoring Report(s), the method(s) used to determine compliance is/are the method(s) specified in the Title V permit.

Comments: (if additional space is needed, please attach supporting documentation and indicate below)

1H2013 was the first Title V Semiannual Monitoring Report which does not address the former Title V permit Condition VIII (Process Equipment Requirements – NRE: New River Energetics). The request for VDEQ to amend the Title V permit for RFAAP to delete all provisions of the permit governing New River Energetics (NRE) was granted during the 1H2013 semiannual monitoring period, and ATK submitted their own Title V Semiannual Monitoring Report for the NRE facility (Reg. #21258 and AFS ID No. 51-121-0082). ATK will be submitting their own 2013 Title V Annual Compliance Certification for the NRE facility.

Attachments (list here): 1H2013 Title V Semiannual Monitoring Report and Attachments was previously submitted by BAE Systems OSI on 29 August 2013. The 2H2013 Title V Semiannual Monitoring Report and Attachments are enclosed with this submittal.

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Responsible Official: Printed Name: William M. Barnett Title: General Manager, RFAAP

Signature: _____ Date: 18 FEB 14

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Responsible Official: Printed Name: Luis A. Ortiz **Commanding (US Army)** Title: **Lieutenant Colonel,**

Signature: _____ Date: 19FEB14

Attachment 1

Title V Semiannual Monitoring Reporting Form

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

TITLE V SEMI-ANNUAL MONITORING REPORTING FORM

This form may be submitted to report all deviations from the conditions in a Virginia DEQ Title V Permit. All Prompt Deviation Reports and/or any supporting information should be submitted as an attachment and listed below.

Date: **Friday, February 28, 2014**

To**: West Central Regional Office, Regional Director**

Source Name: **Radford Army Ammunition Plant** Registration Number: **20656**

Source Address: Route 114, P.O. Box 1 City: Radford State: VA Zip: 24143

This report satisfies our requirement for the **Title V Semi-Annual Monitoring Report (SAMR)**. This report identifies all deviations and periods of non-compliance for the reporting period indicated. All deviations and periods of non-compliance, for the reporting period indicated, have been addressed in this Semi-Annual Monitoring Report.

Please contact **MaryAnn Bogucki**, **Environmental Affairs Specialist - Air** at **540-639-7688**, ext. -- with questions or concerns regarding this report.

(Each Field Below Must be Completed and the Appropriate Box Must be Checked)

Reporting Period Dates: **7/1/2013** through **12/31/2013** Title V Permit Effective Date: **January 15, 2004**

☐ 1. During the reporting period, ALL monitoring and associated record keeping requirements in the Title V Permit were met and no deviations from these requirements or any other conditions occurred.

☒ 2. During the reporting period, all monitoring and associated recordkeeping requirements in the Title V Permit were met and no deviations from these requirements or any other terms or conditions occurred, EXCEPT for the deviations identified below:

- ☒ A. Deviations were addressed in **CEM Excess Emission Report(s)** Dated: **10/30/2013 1/30/2014 10/30/2013 1/30/2014**
- ☐ B. Deviations were addressed in **Fuel Reports** Dated: _____ _____ _____ _____
- ☒ C. Deviations were addressed in **MACT Reports** Dated: **1/30/2014 1/30/2014** _____ _____
- ☒ D. Deviations were addressed in **Malfunction Reports** Dated: **7/9/2013 7/10/2013 12/10/2013 12/16/2013**
- ☒ E. Deviations were addressed in **Prompt Deviation Reports** Dated: **7/15/2013 7/18/2013 8/9/2013 09/10/2013**
- ☒ F. "**Other Deviations**," which were not previously reported, are described in the **Attachment(s)** to this report.

Comments: All reports referenced above are provided as attachments to this report.

Attachments: Previously submitted MACT reports, Powerhouse Excess Emissions Reports, Prompt Deviation Reports, and 14-Day Malfunction Follow-Up Letters are listed in this 2H2013 SAMR under Attachment 4 and are incorporated by reference.

"Other Deviations" are presented on the "Failure to Monitor, Keep Records or Report Form" (Attachment 2) and on the Plant-wide Summary of Deviations form (Attachment 3) included with this 2H2013 SAMR.

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name of Responsible Official: **William M. Barnett**

Title: **General Manager, RFAAP (BAE Systems OSI)**

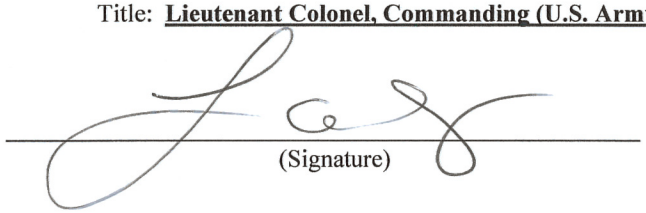
(Signature)

18 Feb 14
(Date)

Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name of Responsible Official: **Luis A. Ortiz**

Title: **Lieutenant Colonel, Commanding (U.S. Army)**



(Signature)

19FEB14

(Date)

Attachment 2

Failure to Monitor, Keep Records or Report Form

FAILURE TO MONITOR, KEEP RECORDS OR REPORT **Registration No.** *20656* **Page:** *Page 1 of 6*

Submitted as Part of Semi-Annual Monitoring Report **Reporting Period:** *1 July through 31 December 2013*

Permit Condition No. & DESCRIPTION OF REQUIREMENT	**DESCRIPTION OF DEVIATION (including date)**	**REASON FOR DEVIATION & CORRECTIVE ACTION TAKEN**
III.A.5. Boilers 2, 3, 4 and/or 5 visible emissions <20% opacity.	Excess opacity from Boilers 2, 3, 4 and/or 5 as previously reported on the Quarterly Powerhouse *Excess Emissions Reports* submitted on 30 October 2013 and 30 January 2014 (listed under previously submitted reports in Attachment 4 of this report). Data in the Quarterly Powerhouse *Excess Emissions Reports* is based on the COMS, which was voluntarily installed and placed into operation during 2007.	Followed SOP, as reported in Quarterly *Excess Emissions Reports* (listed under previously submitted reports in Attachment 4).
VI.C. The permittee shall maintain records of all emission data and operating parameters necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Director, West Central Regional Office. These records shall include, but are not limited to:… b. Daily ether and ethanol concentration data from analysis of either a 24-hour composite sample or grab sample from the wastewater treatment influent.	The daily bioplant composite sample for offsite analysis by REIC Laboratories (a VELAP-certified lab) was not collected on 26 July 2013; or on 27, 28 and 29 November 2013. The internal bioplant composite samples were collected these days and analyzed by the onsite laboratory which is not yet VELAP-certified. However, Title V analytical samples are required to be processed by a VELAP-certified laboratory	An internal investigation indicates that the sample missed on 26 July 2013 was an inadvertent sampling oversight. However, the three samples missed in November 2013 occurred because of personnel insubordination. When subsequently questioned, the operator on duty over the Thanksgiving holiday shutdown stated that he thought because of the holidays, the samples were not needed. However, he had been specifically directed by his Team Leader to collect the samples as normal, and chose not to do so. As a corrective action, strict disciplinary measures consisting of a short-term suspension for insubordination and neglecting their assigned duties were brought against the operator in question. Additionally, the operator was issued a warning letter stating that any future issues would be grounds for termination and/or a

Permit Condition No. & DESCRIPTION OF REQUIREMENT	**DESCRIPTION OF DEVIATION (including date)**	**REASON FOR DEVIATION & CORRECTIVE ACTION TAKEN**
		formal complaint filed against their *Waterworks and Wastewater Works Operator* licensure. Additionally, Procedure 4-27-205 (*Biological Waste Treatment Plant*) states that: "All personnel performing **or supervising** these operations shall be responsible for knowing, understanding and following this procedure." As such, the direct supervisor of the operator who did not collect the samples was also issued a formal warning. Finally, **all operators** were reassigned training on the bioplant sampling procedures as a refresher and to reemphasize the importance of collecting all scheduled required compliance samples.
VII.A.4 [NC: Nitrocellulose Production] The temperature of the fired heater acid gas outlet preceding the SCR catalyst column shall be maintained between 500°F and 650°F during operation.	On 4 November 2013, the SCR was operated for a 5 hour and 11 minute period (13:49 hrs through 19:00 hrs) during which time the fired heater temperature was below the permit limit of 500°F. The nitration process was not operating during the time that the SCR fired heater was below the minimum permit limit. Additionally, no excess NOx emissions occurred as a result of this event (i.e. the average out-NOx concentration for this period was 66 ppmv and visible emissions greater than 10 percent opacity were not observed).	A switch to the Piccolo scrubber had been made previously in the day in order to facilitate repair of a steam leak on the preheater. After the conclusion of these repairs, the operator did not recognize that the SCR fired heater was not yet at temperature, and switched back from the Piccolo to the SCR. Switching between the SCR and the Piccolo is a manual process, and currently no mechanism is in place to prevent making this switch if the temperature is outside of permit limits. Additionally, although there are alarms in place to notify the operator that the temperature is approaching or below permit limits (i.e., a low alarm at 530°F and a low low

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		alarm at 500°F), these alarms would only occur when the SCR is operating and the temperature initially drops below the alarm value and would not occur if the switch to the SCR is made when the temperature is already below 500°F. Therefore, the operator would not have received a warning based on the circumstances of this event. As one component of the corrective action, a software change request has been submitted to implement audible alarms for when the SCR fired heater temperature drops below 500°F. This will be programmed into the alarm panels at both the Nitrator and the SCR. Also, unless the SCR has heated up above the limit of 500°F, the alarm panel will show that the temperature is too low and the system must be on the Piccolo until it is permissible to resume operation of the SCR. Implementation of additional audible alarms will raise awareness so as to enable the operator to more easily recognize situations where the SCR conditions are outside of Title V permit limits. Additionally, another software change request has been submitted to reduce the number of nuisance alarms that the SCR operators receive which may prevent personnel from recognizing and responding to conditions in a timely manner. At the present time, the daily out-NOx analyzer

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		calibrations result in excessive nuisance alarms by triggering multiple alarms with the zero gas (i.e., low and low low alarms) and span gas (i.e., high and high high alarms) calibration checks. The proposed changes would make the alarms inactive when the out-NOx analyzer is in its calibration cycle, improving the operator's ability to recognize and respond to legitimate system alarms. Finally, as the current administrative controls have been demonstrated to be inadequate at preventing this event, the addition of engineering controls is being evaluated as a solution. The current manual process of directing fume flow to either system (i.e., SCR or Piccolo) relies entirely on administrative controls at the present time. A project request was submitted on 5 November 2013 to install limit switches and actuators on the fume valves at the SCR to be able to automatically direct fume flow to the SCR or the Piccolo based on user input and interlocks, so as to prevent fumes from being able to be directed to the SCR when the fired heater temperature is below the permit limit.
IX.A. In accordance with 40 CFR 63, Subpart EEE, Section 63.1203(a), the permittee shall not discharge or cause combustion gases to be emitted into the atmosphere that contain	RFAAP demonstrated intermittent compliance with the stack gas carbon monoxide (CO) emission limitation during the reporting period. Each instance in which the measured CO	Specific reasons for each deviation and the associated corrective actions are detailed on the *Plant-wide Summary of Deviations* spreadsheet appended to this semiannual monitoring report

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emissions in excess of ... • Carbon monoxide: 100 parts per million by volume, over an hourly rolling average (monitored continuously with a continuous emissions monitoring system), dry basis and corrected to 7 percent oxygen. (9 VAC 5-80-110 and 9 VAC 5-60-100) The requirement is that RFAAP shall continuously monitor the stack gas CO concentration and maintain the measured concentration below the permitted limit while burning hazardous waste.	emissions exceeded the permitted limit is detailed on the attached deviations spreadsheet. Each of these instances was previously reported on the HWC MACT semiannual report for the incinerators submitted on 30 January 2014 (listed under previously submitted reports in Attachment 4 of this report).	as Attachment 3.
IX.B.1. The permittee shall comply with the operating requirements and operating parameter limits specified in the September 29, 2003, or most current Documentation of Compliance prepared pursuant to 40 CFR 63, Subpart EEE, Section 63.1211; with the operating requirements and operating parameter limits specified in the Notification of Compliance prepared pursuant to 40 CFR 63, Subpart EEE, Section 63.1210; and with the monitoring requirements in accordance with 40 CFR 63, Subpart EEE, Section 63.1209. (9 VAC 5-80-110 and 9 VAC 5-60-100)	RFAAP demonstrated intermittent compliance with the operating parameter limits (OPLs) specified in the Notification of Compliance (NOC) and incorporated by reference into the Title V operating permit. Each instance in which the measured operating parameter exceeded the applicable OPL is detailed in the attached deviations spreadsheet. Each of these instances was previously reported on the HWC MACT semiannual report for the incinerators submitted on 30 January 2014 (listed under previously submitted reports in Attachment 4 of this report). RFAAP demonstrated intermittent compliance with the monitoring requirements specified by	Specific reasons for each deviation and the associated corrective actions are detailed on the *Plant-wide Summary of Deviations* spreadsheet appended to this semiannual monitoring report as Attachment 3.

Permit Condition No. & DESCRIPTION OF REQUIREMENT	**DESCRIPTION OF DEVIATION (including date)**	**REASON FOR DEVIATION & CORRECTIVE ACTION TAKEN**
	40 CFR 63.1209 due to several instrument failures that occurred during the reporting period. Each instance in which RFAAP failed to monitor a required parameter is detailed in the attached deviations spreadsheet. Each of these instances was previously reported on the HWC MACT semiannual report for the incinerators submitted on 30 January 2014 (listed under previously submitted reports in Attachment 4 of this report).	
IX.B.2. The permittee shall take the following measures in order to minimize the duration and frequency of excess emissions, with respect to air pollution control equipment and process equipment which affect such emissions: a. Develop a maintenance schedule and maintain records of all schedule and non-scheduled maintenance. Records of maintenance, inspections, and training shall be maintained on site for a period of five (5) years and all be made available to DEQ personnel upon request. (9 VAC 5-80-110 and 9 VAC 5-40-20E).	During the reporting period, RFAAP demonstrated intermittent compliance with the requirement to maintain the incinerators following a planned maintenance schedule. Each instance in which a maintenance activity was not performed as planned is detailed in the attached deviations spreadsheet.	Specific reasons for each deviation and the associated corrective actions are detailed on the *Plant-wide Summary of Deviations* spreadsheet appended to this semiannual monitoring report as Attachment 3.

Attachment 3

Plant-Wide Summary of Deviations Spreadsheet

Date	Start Time	Area	Equipment	Description of Deviation and Root Cause	Duration	Magnitude of Emissions or Opacity, If Known	Immediate Response and Corrective Action
07/03/2013	21:06	Explosive Waste Incinerator	441	The operators received an alarm from the baghouse leak detector. Although waste feed was temporarily suspended, it was restarted fairly quickly. The alarm resumed sounding and the operators took no further action to respond to it. This fails to satisfy the HWC NESHAP operating requirement to initiate a response to leak detector alarms within 30 minutes of their sounding.	90 min	None	The baghouse leak detector alarms were sounding on both units simultaneously, however, only Incinerator 441 was burning waste. This indicates that the emissions indicated were not real, but were instead some result of a control system malfunction. Baghouse and leak detector were inspected and no problems were found that would cause elevated particulate emissions. Reviewed required alarm response procedures with operators.
07/04/2013	05:06	Explosive Waste Incinerator	441	While burning waste, the flame to one of the afterburner burners suddenly went out. No emission or operating parameter limit exceedances were registered.	7 min	Not known	Waste feed was automatically shut off upon the flame failure. The burner was relit and waste feed was resumed.
07/04/2013	08:19	Explosive Waste Incinerator	441	Shortly after shutting off the waste feed, the flame on one of the afterburner burners suddenly went out. No emission or operating parameter limit exceedances were registered.	5 min	Not known	Waste feed was automatically shut off upon the flame failure. The flame detector on the afterburner was replaced and the burner was relit. After establishing a stable flame, waste feed was resumed.
07/04/2013	16:54	Explosive Waste Incinerator	441	While burning waste, the flame to one of the afterburner burners suddenly went out. No emission or operating parameter limit exceedances were registered.	1 min	Not known	Waste feed was automatically shut off upon the flame failure. The burner was relit and waste feed was resumed.
07/04/2013	20:30	Explosive Waste Incinerator	441	Shortly after shutting off the waste feed, the flame on one of the afterburner burners suddenly went out. No emission or operating parameter limit exceedances were registered.	3 min	Not known	Waste feed was automatically shut off upon the flame failure. Upon inspection of the burner, the combustion air valve was found to be malfunctioning. The valve was providing less air than demanded by the control system. The valve was repaired and the flame was relit. Once a stable flame was established, waste feed was resumed.

Date	Start Time	Area	Equipment	Description of Deviation and Root Cause	Duration	Magnitude of Emissions or Opacity, If Known	Immediate Response and Corrective Action
09/17/2013	03:46	Explosive Waste Incinerator	440	While burning waste, the CO CEMS alarmed, indicating a low sample pump flow and possible problems with the CO measurements being reported. This event was logged as CMS downtime.	20 min	Not known	The CEMS alarm automatically shut off waste feed. The CEMS was inspected and recalibrated before resuming waste feed.
09/30/2013	10:50	Explosive Waste Incinerator	440	While burning waste, the CO CEMS alarmed, indicating an accumulation of water in the sample conditioning unit and possible problems with the CO measurements being reported. This event was logged as CMS downtime.	20 min	Not known	The CEMS alarm automatically shut off waste feed. The CEMS was inspected and recalibrated before resuming waste feed.
10/23/2013	12:36	Explosive Waste Incinerator	440	A power failure occurred in the incinerator area, causing an upset that led to an exceedance of the stack gas CO limit. In addition, the upset caused the baghouse to bypass.	20 min	CO HRA reached 1,784 ppm with waste in the system.	Waste feed was automatically suspended by the waste feed cut off system. The operator controlled the shutdown following proper procedures. Waste feed was not resumed until power was restored and the unit was stabilized.
10/27/2013	N/A	Explosive Waste Incinerator	440	The weekly vibration check scheduled for Incinerator 440 and described in the Incinerators' Operation & Maintenance Plan was not performed as scheduled during the week of October 27, 2013.	N/A	None	The vibration check is performed to maintain reliability of the combustion air blowers and the induced draft fan. The check was performed the weeks prior to and following this incident without any problems. No problems were experienced with the blowers or the fan during the week.
10/27/2013	N/A	Explosive Waste Incinerator	440	The weekly waste feed cutoff check scheduled for Incinerator 440 and described in the Incinerators' CMS PE Plan was not performed as scheduled during the week of October 27, 2013.	N/A	None	The weekly checks were performed the weeks prior to and following this incident. In addition, monthly waste feed cutoff tests were performed in October as required. Each of these tests indicated no problems with the waste feed cutoff system.
11/25/2013	05:12	Explosive Waste Incinerator	440	While burning waste, the brine pump supplying water to the evaporative cooler failed, causing an exceedance of the baghouse inlet temperature limit and a bypass of the baghouse.	14 min	Not known	The operator switched control to the other brine pump, brought the baghouse back online, and restored the unit to normal operations.The brine pump was repaired before being placed back in service.

Date	Start Time	Area	Equipment	Description of Deviation and Root Cause	Duration	Magnitude of Emissions or Opacity, If Known	Immediate Response and Corrective Action
11/27/2013	05:04	Explosive Waste Incinerator	440	While burning waste, the baghouse bypass switch activated without cause, leading to a baghouse bypass. Higher than normal particulate matter emissions were indicated by the baghouse leak detector.	2 min	Not known	The waste feed was automatically shut off when the baghouse bypassed. The baghouse was brought back online. The switch was inspected before resuming normal operations.
12/10/2013	20:02	Explosive Waste Incinerator	441	Shortly after shutting off the waste feed, the flame on one of the afterburner burners suddenly went out. No emission or operating parameter limit exceedances were registered.	6 min	Not known	Waste feed was automatically shut off upon the flame failure. The burner was relit and waste feed was resumed.
12/12/2013	20:12	Explosive Waste Incinerator	441	Shortly after shutting off the waste feed, the flame on one of the afterburner burners suddenly went out. No emission or operating parameter limit exceedances were registered.	5 min	Not known	Waste feed was automatically shut off upon the flame failure. The burner was relit and waste feed was resumed.
12/14/2013	20:15	Explosive Waste Incinerator	441	Shortly after shutting off the waste feed, the flame on one of the afterburner burners suddenly went out. No emission or operating parameter limit exceedances were registered.	2 min	Not known	Waste feed was automatically shut off upon the flame failure. The burner was relit and waste feed was resumed.
12/17/2013	20:48	Explosive Waste Incinerator	441	Shortly after shutting off the waste feed, the flame on one of the afterburner burners suddenly went out. No emission or operating parameter limit exceedances were registered.	6 min	Not known	Waste feed was automatically shut off upon the flame failure. The burner was relit and waste feed was resumed. Instrumentation technician inspected the burner control system on the dayshift the following day. No problems were found.
12/20/2013	04:46	Explosive Waste Incinerator	441	While burning waste, the flame to one of the afterburner burners suddenly went out. No emission or operating parameter limit exceedances were registered.	4 min	Not known	Waste feed was automatically shut off upon the flame failure. The burner was relit. The system was idled until an instrument technician could inspect the burner system. No problems were found.

Date	Start Time	Area	Equipment	Description of Deviation and Root Cause	Duration	Magnitude of Emissions or Opacity, If Known	Immediate Response and Corrective Action
12/20/2013	20:32	Explosive Waste Incinerator	441	While burning waste, the flame to one of the afterburner burners suddenly went out. No emission or operating parameter limit exceedances were registered.	2 min	Not known	Waste feed was automatically shut off upon the flame failure. The burner was relit. The system was shut down for a more indepth investigation of the burner system. This investigation is still ongoing.
12/26/2013	N/A	Explosive Waste Incinerator	440	The monthly waste flow meter calibration scheduled for Incinerator 440 and described in the Incinerators' CMS PE Plan was not performed as scheduled during December 2013.	N/A	Not known	The meter was calibrated in late November 2013 and in early January 2014. Total duration between the calibrations was 39 days. The January 2014 calibration found the meter to be within acceptable tolerances and no adjustments were necessary.
12/26/2013	N/A	Explosive Waste Incinerator	440	The monthly pH analyzer calibration scheduled for Incinerator 440 and described in the Incinerators' CMS PE Plan was not performed as scheduled during December 2013.	N/A	Not known	The analyzer was calibrated in late November 2013 and in early January 2014. Total duration between the calibrations was 39 days. The January 2014 calibration found the meter to be within acceptable tolerances and no adjustments were necessary.

All Powerhouse deviations for this semiannual period (2H2013) have been previously reported in the quarterly Excess Emissions Reports dated 30 October 2013 (3Q2013) and 30 January 2014 (4Q2013).

All SCR deviations for this semiannual period (2H2013) have been previously reported in the quarterly CMS Reports for the Nitrocellulose Process NOx Abatement System dated 30 October 2013 (3Q2013) and 30 January 2014 (4Q2013), or through 14-Day Follow-Up Letters as listed in Attachment 4 of this Semiannual Monitoring Report.

Attachment 4

Summary of Previous Reporting for the 2H2013 Semiannual Monitoring Period

Summary of Previous Reporting for the 2H2013 Semiannual Monitoring Period

► ***Previously Submitted Quarterly Reports for 2H2013***

- 3Q2013 Powerhouse Quarterly Excess Emissions Report (30 October 2013)
- 4Q2013 Powerhouse Quarterly Excess Emissions Report (30 January 2014)
- 3Q2013 CMS Report for the Nitrocellulose Process NOx Abatement System (30 October 2013)
- 4Q2013 CMS Report for the Nitrocellulose Process NOx Abatement System (30 January 2014)
- 3Q2013 CEMS Report for the Explosive Waste Incinerators (440/441) (30 October 2013)
- 4Q2013 CEMS Report for the Explosive Waste Incinerators (440/441) (30 January 2014)

► ***Previously Submitted Semiannual Reports for 2H2013***

- 2H2013 MACT Subpart EEE Report – Explosive Waste Incinerators 440/441 (30 Jan. 2014)
- 2H2013 MACT Subpart EEEE Report – Organic Liquid Distribution (30 Jan. 2014)
- 2H2013 Misc. Organic NESHAP (MON) Subpart FFFF Semiannual Report (30 Jan. 2014)

► ***Previously Submitted Prompt Deviation Reports for 2H2013***

07-15-2013 Prompt Deviation Report for Visible Emissions from the Acid Area Tank Farm
07-18-2013 Prompt Deviation Report for Visible Emissions from the Acid Area Tank Farm
08-09-2013 Prompt Deviation Report for Fume-Off at the Nitrocellulose Manufacturing Process
09-10-2013 Prompt Deviation Report for Visible Emissions at the Nitrocellulose Manufacturing Process

► ***Previously Submitted Malfunction Follow-Up Reports for 2H2013***

07-09-2013 14-Day Follow-up for Piccolo Visible Emissions
07-10-2013 14-Day Follow-Up for the Acid Area Fume-Off Events
12-10-2013 14-Day Follow-Up for Ammonia Loss at the SCR
12-16-2013 14-Day Follow-Up for Excess Emissions at the NAC/SAC
12-19-2013 14-Day Follow-Up for Visible Emissions at the Piccolo Stack